THE BUILDER

Incorporating ARCHITECTURE & THE BRITISH ARCHITECT

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THIS WEEK'S NEWS

THE RIBA and ABT are to hold exploratory discussions on the representation of salaried architects. Meanwhile, the British Architectural Guild has convened a meeting of architectural bodies to find "a common basis of agreement." p. 925

COVENTRY CATHEDRAL Reconstruction Committee are soon to publicly advertise for firms interested in carrying out various works in connection with the erection of the new Cathedral. p. 925

BUCKS COUNTY COUNCIL have agreed to allow their architect and chief education officer to collaborate with the Ministry of Education on the design of a new school using traditional methods of construction and new ideas on education planning. p. 945

HOUSE PURCHASE

THE plans recently announced by the Minister of Housing and Local Government for encouraging house purchase are good as far as they go. They appear to be based on the assumption that the main deterrent to house purchase is the large initial deposit rather than high interest charges and the burden of repayment. This assumption is probably correct, although it should not be thought that the prospect of heavy annual payments for maybe 20 years ahead is not also a very serious deterrent, particularly as many couples acquire a house at the same time as they are starting a family and the burden of mortgage payments is added to the cost of rearing the family. Nevertheless, there can be no doubt that the Minister's proposals should help to overcome one of the major difficulties involved in buying a house.

The Minister's proposals, which were summarised in *The Builder* for May 7, take two forms. First, it is suggested that local authorities should make wider use of their powers to lend money on mortgage to persons wishing to buy a house or to build, repair or improve a house. A local authority may now lend up to 90 per cent. of the value of the mortgaged security—a substantially greater advance than building societies are normally prepared to make. Many authorities have been unwilling to lend the full statutory maximum, but the Minister now points out that the risk involved in a generous advance should be measured against the rate burden which would fall on the authority if the applicant withdrew his request for a loan and relied on his rights to consideration for a council house or flat.

Second, the Minister has put forward two schemes of guarantee for use by local authorities; these schemes enable an authority to guarantee two-thirds of the excess over the amount which a building society would normally lend on mortgage. The amount which a building society will lend varies according to circumstances, but in scheme A it is assumed that the normal advance would be 70 per cent.; the local authority will be permitted by the Minister to guarantee the difference between an advance of 70 per cent. and of 90 per cent., provided the purchase price or the valuation (whichever is the lower) does not exceed £2,500. Under scheme B (which is confined to a house built after 1918) the normal building society advance is put at 66⅔ per cent.; the local authority may guarantee the excess up to 95 per cent. provided the purchase price or the valuation (whichever is the lower) does not exceed £2,000. The rate of interest under both schemes is to be 4½ per cent., and the maximum period of repayment is to be 25 years. The local authority's guarantee is to come to an end when the amount of the principal outstanding falls below a certain percentage. In the event of the authority being called upon to implement the guarantee, the Government would re-imburse the authority to the extent of one-half of their loss.

The adoption of these plans depends principally upon the local authorities; it is entirely within their discretion whether they lend money on mortgage or enter into guarantees with building societies. It is to be hoped that all local authorities will follow the Minister's advice and carry out these proposals. It is probably true to say that most families would prefer to own their own home, and this surely is something to be encouraged. Moreover, there will be a considerable saving in the heavy expenditure on housing subsidies—an item of public expenditure which is threatening to reach formidable proportions.

The guarantee schemes have the advantage of limiting the local authority's liability to one-third of the loss incurred if the building society have to realise the security; moreover, unless and until the liability is incurred, there is no actual expenditure of public money. For the purpose of themselves lending money, local authorities raise a loan from the Public Works Loan Board and may charge interest at a rate not exceeding one-half per cent. above their own borrowing rate. The present borrowing rate fixed in October, 1953, is 4 per cent. for loans over 15 years, so that from the point of view of the would-be house purchaser there is not at the moment much to choose between a local authority or a building society mortgage. Since the Minister's announcement, however, there has been a reduction in the Bank Rate, and if this be followed by a reduction in the rate at which local authorities can borrow from the Public Works Loan Board, house purchasers may prefer the local authority mortgage. This might create difficult problems for the local authorities; they may prefer, as suggested by the Minister, to limit their risk by adopting the guarantee scheme but find at the same time that purchasers wish to have a direct local authority mortgage. It would, of course, be quite wrong to keep the PWLB rate high simply for the benefit of the building societies.

So long as house values remain high, there is not likely to be much risk either to building societies or to local authorities in lending money. The risk will arise if and when house values show any substantial fall. This fact points to the essential limitations of the Minister's proposals, excellent as they are. The fact is that house values and building costs are too high. The fundamental need is not for easier borrowing arrangements but for cheaper houses.

LOCAL AUTHORITY CONTRACTS

SUCCESSIVE editions of the RIBA Standard Form have provided over the years a sound basis for contracts between building owners and contractors. It is not a perfect form of contract and members of the legal profession sometimes criticise the draughtsmanship, but it is a workable and well-tried instrument. Moreover, in many respects it represents the codification of the general law and practice in relation to building contracts. The peculiar requirements of local authorities as building owners have been recognised by the issue of a specially adapted form, the value of which has been stressed by the Ministry of Housing and Local Government.

In these circumstances, it is disturbing to find evidence of attempts to undermine the RIBA Standard Form. A particularly unfortunate instance occurred recently in connection with three separate contracts entered into between a local authority and a firm of builders for the erection of three groups of houses; these contracts (which ran virtually concurrently) were completed in December, 1951, March, 1952, and June, 1952, respectively. A dispute arose over the amount claimed by the contractors for timber. The tender had been submitted when timber was subject to control, and the basic list contained a note inserted by the local authority that " charges for special lengths and sizes, cutting, conversion, processing, etc., are not fluctuations and tender rates are deemed to include these charges." Delivery of the timber was taken after the controls had been removed, when prices rose steeply and conversion charges were no longer separately listed. The corporation sought to make a deduction of £5 a standard for conversion charges which they claimed as part of the basic price. Whatever the merits of this argument, the significant point is that the fluctuations for timber prices had been agreed and approved by the quantity surveyor acting for the corporation; it was only at the end of the contracts when the borough treasurer carried out a financial audit that the quantity surveyor's authority was overridden.

The question of the timber prices was submitted, together with other disputed matters, to arbitration and it would appear from the arbitrator's award dated in March last that the contractors were successful on this particular issue. It seems clear that there would have been no need for this matter to have gone to arbitration but for the interference—we use the word advisedly—of the borough treasurer. It is hard to see how a borough treasurer could possibly have thought that he had any authority under the RIBA Standard Form to overrule the quantity surveyor. Clause 9 of the form states explicitly that all fluctuations are to be measured and valued by the surveyor; it is doubtful whether the architect would have any authority to overrule the surveyor on questions of measurement and valuation, and certainly no one else is entitled to interfere.

It is true that the Local Government Manpower Committee, in their First Report (Cmd. 7870), recommended that " as a standard practice all proposed contract settlements should be reviewed by the chief financial officer or his staff before the technical officer gives his final certificate. . . . It is recognised that in a few of the larger authorities such an arrangement might, owing to the sheer volume of the work, involve unacceptable delays, and it is suggested that in such cases the chief financial officer should have the right to carry out retrospective reviews." The RIBA Contract in its present form, however, gives no authority for any such retrospective review, and these remarks by the Local Government Manpower Committee afford no justification for the action of the borough treasurer in the present case. We are glad to observe that, although each party to the arbitration had to bear its own costs, the corporation were ordered to pay the arbitrator's costs; we do not know whether this reflected the arbitrator's view as to the conduct of the local authority, but it seems a fitting penalty.

In conclusion, it is to be hoped that local authorities will not attempt to secure amendments to the RIBA Form which would authorise the chief financial officer to intervene in the manner suggested, though from reports which reach us the custom is, we fear, not uncommon. A retrospective review of final certificates would be intolerable, and it is astonishing that a responsible committee should have thought that such an arrangement would be acceptable to the building industry. There is perhaps less objection to the financial officer reviewing settlements before the certificate is given, but there seems no real necessity for this; after all, the quantity surveyor is fully competent to deal with these matters. Moreover, the contractor knows that he can rely on the independent technical judgment of the quantity surveyor, but he might not have the same confidence in the non-technical staff of a borough treasurer's department. Nor, in the long run, is the intervention of the financial officer likely to benefit the local authority. Local authorities who are tempted to alter the RIBA Form should re-read circular 42/1952 in which the Minister deprecated alterations in the following terms :—

" Such alterations to the standard conditions and contrary or conflicting provisions in the bills of quantities or other contract documents are liable to give rise to misunderstandings and may lead to claims by contractors. They may also deter builders from tendering and reduce competition or add to the prices tendered."

MINISTRY OF WORKS

C.L. 1138 Revised October, 1951

BUILDING LICENCE

Building Licensing—Defence (General) Regulations 1939 Regulation 56A

LICENCE No.: 9/0/11822

Please quote on all correspondence

To The Coventry Cathedral Reconstruction Committee,
22, Bayley Lane,
Coventry.

Ministry of Works.
Regional Licensing Officer,
Ashley Street,
BIRMINGHAM, 5
Tel. Midland 7121

SUBJECT TO THE CONDITIONS hereafter set forth, this LICENCE is hereby granted to carry out building of new Cathedral

at Coventry.

at a TOTAL COST not exceeding £95,000 (Nine hundred and eighty-five thousand pounds)

in accordance with the APPLICATION dated 5th May, 1954.

and the Plans and Specifications submitted Drawings

(Date) 6th May, 1954. (Signed) William S. McClen
Assistant Director
on behalf of the Minister of Works

CONDITIONS

One responsible person must be appointed to complete information on the progress of the job, on Ministry of Works Form C.P.S.23, which is sent out each month, and should be returned to Regional Programmes and Statistics Officer as soon as possible after the last pay day of each month.

The contents of this licence and of any documents relative thereto must be made known to any builder, contractor, architect, engineer or other person employed in an advisory or supervisory capacity in connection with the work.

For further conditions and Notes, see overleaf

COVENTRY CATHEDRAL. Seen above is a reproduction of the MoW building licence for Coventry Cathedral. This is the first time that a licence for such a structure has been granted in its entirety. A reference to the Cathedral reconstruction committee's arrangement for letting the foundation and civil engineering work contract is on facing page.

NOTES & NEWS

SALARIED ARCHITECTS

FOLLOWING on the inquiry sent to members on the representation of architects in salaried employment, the RIBA Council are studying what further action may be taken.

As a first step they have decided to hold exploratory discussions with the Association of Building Technicians without, at this stage, involving either side in any definite commitments.

The ABT have agreed to this step and representatives for these discussions have been appointed by each party.

* * *

THE SECRETARY of the British Architectural Guild writes: 'The Council of the Guild have decided to postpone direct approach to the profession in regard to membership pending the holding of a joint conference at Brown's Hotel on Thursday, June 3, to which representatives of the RIBA, IAAS, InstRA, Faculty of Architects and the unattached architects on ARCUK have been invited with a view to finding, if possible, a common basis of agreement by which the Guild can serve the interests of the whole profession as a protective body for salaried architects.

NEW SCHOOLS

IN his Alfred Bossom Lecture to the RSA (reported in our last issue) Mr. C. H. Aslin, the Hertfordshire County Architect, made some points we should have liked to have heard expanded in the discussion, writes Basil Marriott. One was that, as he said, we are at last planning "from the inside outwards," as opposed to squeezing conventional "rooms" into a predetermined box. Are the implications of this yet fully grasped? The Hertfordshire schools show that we can make an architecture just as surely through the simple "clothing" of logical spatial arrangement as any dressing-up of elevations. Another point—which cannot be made too often, for it still tends to be regarded with scepticism—was that good design thrives on difficult conditioning factors. Hertfordshire again proves that the invention born of necessity can be a very handsome child if the parentage is imaginative as well as thrifty. The fact that the combination is at present paradoxically expensive is incidental.

CONTROLLED MASS-PRODUCTION

MR. ASLIN described his approach as an extension of the technique of assembling mass-produced components: this, as he said, is not new, but he was too modest on his team's behalf to say that what is new is the sensitive and imaginative competence with which it is controlled in Hertfordshire. The results must in all justice be regarded primarily as a brilliant improvision to meet local circumstances, including the county's greater wealth in children than traditional building craftsmen. Indeed, no more is claimed than this, but the fact does not lessen the admiration here and abroad.

The principle is surely capable of wider application—notably in housing, where similar planning from inside outwards is overdue, not to mention the obsolescence of the conventional labels of "living," "sitting," "dining" rooms.

COVENTRY TO BEGIN

COVENTRY CATHEDRAL Reconstruction Committee will, within the next few days, publicly advertise for firms interested in carrying out the works of site clearance, excavation, concrete foundations and civil engineering for the Cathedral. From the names submitted, a short list will be selected to tender by a panel consisting of Mr. Ove Arup, Mr. E. H. Ford (chairman of the reconstruction committee), Capt. Thurston (secretary) and the architect, Mr. Basil Spence, OBE, ARA.

OPEN-AIR SCULPTURE

IT IS generally acknowledged that where the arts are concerned, municipal authorities are not always the best people to be in charge. At least, that was the trend of thought which existed when private individuals were the artist's main clients. The situation now is somewhat different.

Government Departments and local authorities have become important patrons of the arts and in a great many instances they have shown proper respect for the artist and his creations.

London County Council is one such authority which has done much to encourage and popularise art. The open-air exhibitions of sculpture which they have organised in recent years have proved to be highly successful enterprises. Another of these exhibitions is to be opened to-day, May 28, at London's new open space, Holland Park, in Kensington.

Twenty-nine contemporary works will be displayed in the natural woodland surroundings near what is left of Holland House. In showing works by artists of the present century, the council has followed the precedents of Battersea Park in 1948 and 1951. As a variation, however, reproductions are being included on two early masterpieces, twelfth-century Hindu "Celestial Drummer," and the classic Greek statue probably representing Dionysus, god of wine, from the eastern pediment of the Parthenon.

COMING EVENTS

FRIDAY, MAY 28

BBC HOME SERVICE.—Schools broadcast about concert halls, by Dr. J. L. Martin, FRIBA, Chief Architect, LCC. 2.20 p.m.

MONDAY, MAY 31

COUNCIL FOR THE PRESERVATION OF RURAL ENGLAND.—Annual general meeting and an address by Mr. Harold Macmillan, Minister of Housing, 66, Portland-place W1. 2.30 p.m.

RICS.—AGM, 12, Great George-street, SW1. 5 p.m.

TUESDAY, JUNE 1

DESIGN AND INDUSTRIES ASSOCIATION.—"Buildings of England," by Dr. Nikolaus Pevsner, CBE. Royal Society, Burlington House, W1. 2.30 p.m.

LCC BRIXTON SCHOOL OF BUILDING.—Prize distribution and sports day. Sports Ground, Raynes Park, SW22. 9.30 a.m.–4.30 p.m.

POLISH CULTURAL INSTITUTE.—Programme of architectural films by Hugh Morris and John Noble, AA.RIBA. 81, Portland-place, W1. 8 p.m.

WEDNESDAY, JUNE 2

SOCIETY FOR CULTURAL RELATIONS WITH THE USSR.—Lecture on problems of Soviet housing law, by Mr. D. Veall. 14, Kensington-square, W8. 7.30 p.m.

REINFORCED CONCRETE ASSOCIATION.—Luncheon, St. Ermins Hotel, Caxton-street, SW1. 1 p.m.

THURSDAY, JUNE 3

EAST HAM EDUCATION COMMITTEE.—Speech night and exhibition of work. East Ham School of Building, Arragon-road, E6. 7.15 p.m.

FRIDAY, JUNE 4

NATIONAL FEDERATION OF BUILDING TRADES EMPLOYERS.—Annual cricket match *v.* Vitruvians XI. Richmond Cricket Club, Surrey. 11.30 a.m.

HISTORIC CHURCHES PRESERVATION TRUST.—Conference on Problems in the Preservation of Churches. Hoare Memorial Hall, Church House, SW1. 10 a.m. Continuing on June 5.

"And this, presumably, is one of the runners from Downing Street!"

*** *On June 1 Mr. Roger Bannister and other athletes are to run through London streets in aid of "Save our Churches" week, carrying cheques handed to them by the Prime Minister to be taken to four Churches in Central London.*

RICS ANNUAL MEETING

THE annual general meeting of the Royal Institution of Chartered Surveyors to receive the council's report for the session 1953-1954, and announcement of the results of the election of the council for the ensuing session, will be held at the Institution on May 31, at 5 p.m.

ARCHITECTURAL POST

APPLICATIONS are invited for the appointment of Deputy County Architect to Breconshire County Council. Details are given in our advertisement columns.

PROFESSIONAL ANNOUNCEMENTS

MR. WELLS COATES, OBE, FRIBA, MRAIC and MISS JACQUELINE TYRWHITT, AILA, AMTPI have dissolved their association in this country by mutual consent. Mr. Wells Coates has taken into partnership MR. MICHAEL LYELL, AADip(Hons), ARIBA, and the firm will in future be known as MESSRS. WELLS COATES & MICHAEL LYELL, with offices at 16/18, Yeomans Row, Brompton-road, London, SW3 (Tel.: Kensington 9252 and 9253). Mr. Michael Lyell will also be associated with Mr. Wells Coates in his Canadian practice under the style of MESSRS. WELLS COATES ASSOCIATES, with temporary offices at 717, Church-street, Toronto, Ontario, and later at Iroquois, Ontario.

THE Manchester office of MESSRS. CORDINGLEY AND MCINTYRE, of Durham and Manchester, is being transferred to MR. R. B. TURNER, ARIBA, AMTPI, who will continue the practice at the same address, 180, Oxford-road, Manchester (Tel.: Ardwick 1243).

FROM "THE BUILDER" OF 1854

Saturday, May 27, 1854

PUBLIC BUILDINGS IN DOWNING-STREET.—It appears from a Parliamentary paper lately issued, that the expenses incurred in the alterations, repairs, and improvements in the various public buildings in Downing-street from 1831 to 1853 inclusive, amounted in the whole to 24,971*l.*

CORRESPONDENCE

"AN ARCHITECTS' GUILD"

To the Editor of *The Builder*

SIR,—Matters of RIBA policy have often been the subject of critical or sympathetic comment in *The Builder*. For reasons which you and your readers will fathom, it has not been the practice of the RIBA to enter into Press controversy; but this does not mean that much of the comment in question is not fully appreciated and considered.

On this occasion, however, I am breaking with precedent in the hope that my Council, which does not meet until June 15, will support me. For I am by no means happy with the tone of your leader of May 21, "An Architects' Guild," and I do feel that this leader is not only unjust to the Council but is in particular misleading to your reader members of the RIBA.

I take exception in particular to two items. The first refers to the ABT: "The [RIBA] Council would be courting failure by opening negotiations with the ABT, and may well lay itself open to the charge of deliberately sabotaging the idea of a sponsored union." This statement is so couched that it cannot be construed as libellous. But if it is intended as a friendly warning, it is most unhappily—even offensively—put. And I think the RIBA Council, and members generally, are entitled to resent any imputation that the Council even envisaged any action in bad faith such as is implied here.

The second item is as follows: "The present strength of the RIBA is beyond question. Its weakness lies in the *continual* failure (the italics are mine) of the Council to give unequivocal support to views which are held by the majority of the profession and in its habit of temporising while situations deteriorate beneath its nose." And it goes on to say: "A new Council which meets for the first time on July 6 now has the opportunity of proving itself of better mettle."

I submit, Sir, that the first part of this statement is simply incorrect in fact. On the matter under review, the Council has taken immediate action in accordance with the majority view as expressed in the questionnaire. It has not temporised in any way, but is pursuing a policy fully and properly considered in accordance with its constitution and machinery. The last portion of the paragraph merely takes an opportunity to deliver a parting "kick," or should I call it "swipe"? at the retiring Council, and I, personally, cannot but feel that, in view of the efficient and conscientious work done by the Council on behalf of its members, the comment is both ungenerous and unworthy of *The Builder*.

HOWARD ROBERTSON, President, RIBA.
66, Portland-place, W1.

ARCHITECTURAL CRITICISM

To the Editor of *The Builder*

SIR,—The arguments for and against architectural criticism in the technical Press—that is, criticism of recently erected buildings—set forth in the two papers on "Architectural Journalism" at the RIBA and reported in your last issue, seemed to me to be very fair and comprehensive. The chief, and as I believe conclusive, argument against such criticism is, as you, Sir, pointed out, that it is not invited, and the reason it is not invited is that neither the building owner nor the architect wants it.

It is a great mistake to suppose that criticism is desired by anybody for himself. Artists and art galleries, authors and publishers, playwrights and producers put up with it because they have something to sell and hope that Press publicity will help to sell it. Architects and building owners generally have nothing to sell—they have got together with a builder to produce a building for a specific purpose. If the building owner wishes to sell or let the building he will announce the fact through estate agents or in the advertisement columns of the Press. This is the main reason why architecture is not "on all fours" with the other arts in respect of criticism.

A further argument against æsthetic criticism of erected buildings is that it is useless so far as any particular building is concerned. The painter, the sculptor, the author, the musician, the playwright all produce works that can be affected by criticism, and which can be destroyed or forgotten if they do not sell. A building, on the other hand, provided it is soundly constructed, continues to exist, is entirely unaffected by criticism, and remains a profitable investment. Criticism of it, from the æsthetic point of view, is about as useful as ploughing the sand.

As you said, to be of any practical use criticism must come at the design stage, and provision for this, one is glad to note, is more and more being made—witness the exhibition of designs for the redevelopment of the South Bank, the activities of the Royal Fine Art Commission, local architectural panels, and the co-ordination of designs for the rebuilding of the City. And, there is always the Architectural Room at the Royal Academy, which never fails to receive chastisement by the critics.

There is, of course, nothing new about this itch for æsthetic criticism of executed work; it has been tried by several papers over the past 50 years, and dropped. The late Sir Charles Reilly, for example, induced two of the Lancashire "dailies" years ago to give him space, from time to time, to criticise current architecture in the Liverpool and Manchester areas, but the complaints and threats of litigation by exasperated architects and building owners became so frequent that the editors came to the conclusion that the feature was more nuisance than it was worth and it was quietly dropped. Our youthful enthusiasts may perhaps learn similarly from experience.

It is, of course, argued that current architecture should be criticised in the public interest. The answer to that is, Who are to be the critics and what their standard of criticism? Practising architects are not likely to undertake such criticism since it would hardly be in accordance with professional etiquette to do so, and it would inevitably get into the hands of a small number of professional critics, which would be unhealthy for architecture. Since all æsthetic judgment is subject to personal bias these critics differ among themselves, and their pontificating would probably leave the public in a more bewildered state of mind than ever.

And why are these ardent critics so coyly evasive when it is suggested that they should get into the hurly-burly of professional practice and show us by example what good architecture really is?

To sum up, criticism of executed work is neither invited nor desired by those chiefly concerned: it is useless practically; it is superfluous in the technical Press, and not wanted by the lay Press. All that can be said for it is that it satisfies the ego of the critic and makes entertaining reading for those who are not criticised.

G. J. HOWLING.

Wimbledon, SW19.

PAINTING CONTRACTORS AND NJC

To the Editor of *The Builder*

SIR,—According to report (*The Builder*, May 14, page 862), Mr. Kenyon, the newly elected President of the Federation of Painting Contractors, has chosen to inaugurate his office by an unwarranted attack on the authority of the National Joint Council for the Building Industry.

Mr. Kenyon's annoyance—which one can perhaps understand—with the NJC for not accepting the affiliation of the Painting Contractors has quite deprived him of the ability to arrive at any objective conclusion. I must leave the Employers' side of the Council to deal with the matter in so far as it affects them, but speaking for the Operatives' side, let me inform Mr. Kenyon that the Transport and General Workers' Union properly caters for building trades labourers and therefore is fully entitled to speak for the labourers and represent them on the NJC. The T and G W U does not consider itself free to negotiate, and has not in fact negotiated, separate agreements on behalf of any building craftsmen, as the Union does not cater for this group.

Whether the building trade labourers' rate of pay is the proper one or not is hardly relevant to Mr. Kenyon's charge. A labourer at 18 receives the full rate presumably because he does exactly the same kind of work as older labourers; whereas, an apprentice at 18 is still in the process of being trained.

I can assure Mr. Kenyon that the National Joint Council is an authoritative body speaking on behalf of the organised employers and operatives. Whether it is able to enforce its decisions is a matter outside the immediate argument, for the question of enforcement relates to the law and all its complexities.

R. COPPOCK, General Secretary,
National Federation of Building
Trades Operatives.
Federal House, Clapham, SW4.

OBITUARY

WILLIAM VAN ALEN

THE DEATH is reported from New York of Mr. William van Alen, who designed the Chrysler building. He was 71.

SCULPTURE AT THE RA

Reviewed by Marjorie Morrison

HAVING lost or won on the Guineas, thrilled to the excitement of the Cup Final and attended the hundred and eighty-sixth Academy Opening, we know that, come sun, snow or hail, summer has begun.

To those of us who regard the Exhibition of the Royal Academy of Arts as something more than a social occasion and fashion parade, this year's sculpture show holds out promise of rebellion against the monotony and mediocrity of the last two or three years. This time we seem to find fewer of the old familiar faces, the inevitable works that we have learned to expect year after year from the "Regulars" and which, good or bad, are too often such a bore.

Among the 260 pieces of sculpture shown this year the most intriguing and exciting are by comparatively unknown and presumably very young sculptors. Looking at the arrangement of the Central Gallery and the Lecture Room, where most of the sculpture is concentrated, it is nice to see how well the work of the younger people has been placed by those responsible.

It is difficult to find headings under which to discuss the very varied exhibits but "monumental masonry," as *The Times* Art Critic puts it, makes quite a good category to start on. It may be right and proper to have our bread and butter before cake, but there is no need to linger over it. One quick look at the "inescapables" in the Central Hall, taking William McMillan first with his model for the Memorial to be erected to Alcock and Whitten Brown at London Airport (1219). This consists of two figures in full flying kit, smooth and competent enough but dull and characterless. Near at hand the model by Thomas B. Huxley-Jones for "David Livingstone" (erected outside the Royal Geographical Society), is a different story. This natural and friendly figure leaning on his stick is very much a person (1206). The "Fisherman," by Siegfried Charoux, is a fine elemental creature coloured a deep brown and interesting in surface quality (1211). If he were to be left out in the rain long enough to get nicely weathered, he could then occupy a pedestal in the centre of the market in some northern fishing town and look at home.

Seated Girl (Ciment-Fondu). By S. C. Harpley.

It is easy to laugh at sculpture for memorials, buildings and public places, but oh! how difficult it must be to achieve anything beyond adequacy. A case in point is James Woodford's work for the Robin Hood lawn at Nottingham Castle (1305). He shows models for two companion groups, both triangular compositions of sitting figures leaning back to back. Seen here, out of their context, we can have little idea of the limitations imposed or the difficulties involved, but we can guess that by the time all parties were satisfied, James Woodford's original inspiration was quenched. There remain two skilful figure compositions in medieval fancy dress.

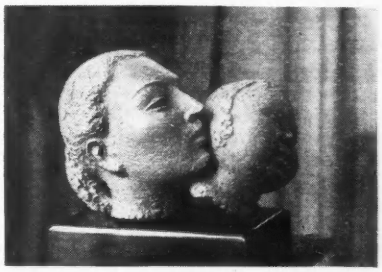
TWO CONVINCING PIECES

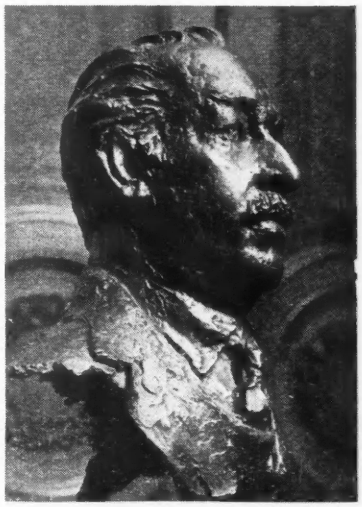
We can relax now and inspect two surprising young women. "Seated Girl" and "Standing Girl" are not gate-crashers; they have obviously been made welcome. We are very glad that nobody thought of turning them away. The "Seated Girl" (1216) is in the Central Hall and makes the other exhibits look a little unconvincing. Supine, resting on the very edge of her chair with legs stretched out in front and arms crossed behind her, she is relaxation personified. Dressed in skirt and high-necked cardigan, her hair tied up in a horse's tail she looks like any young student, art or otherwise. Why is this work so good? It may be that, although completely representational in treatment, it is refined down to essentials, thus giving an impression of unity and reality to the whole composition. The young sculptor, Sydney Harpley, has been praised since the exhibition opened but after the praise there is always a reference to Manzù. Well, Maillol, Moore or Manzù—what does it matter? Few young men can avoid all influences.

The other young woman is standing in the Lecture Hall (1310) and is a most beautiful piece of work, again by a young sculptor, John D. Prangnell. The surface handling is broader and rougher than in the seated girl, but it suits the vitality of the figure. She stands with feet apart, hands lying along her thighs, her head turned away, looking and waiting for something—a very contemporary type. She is also wearing a jumper and skirt and again the sculptural treatment of the clothes is very successful.

Now for the portraits. There are a great many, and the standard is exceptionally high so the best thing is to pick out a few of the most striking. Frank Dobson has a very lively bust of Sir Thomas Lipton (1283) dressed in yachting rig, binoculars in hand. It is boldly modelled and has a wonderful feeling of character considering that it was done posthumously.

Maurice Lambert's head of Sir Arthur Bliss, in silver-bronze (1288), strikes one as perfect of its kind. An intimate study of a very individual person, it achieves great dignity. Very different again is "Mother and Child" by Dora Gordine (1291). This bronze is interesting as a composition. The two heads, cut off at base of the neck, express in their pose the whole essence of the mother and child relationship more poignantly than two complete figures could have done. Benno Schotz shows a fascinating composition of two portrait busts, Paul and Esta Henry—a conversation piece in bronze (1301). There is something reminiscent of Epstein's technique in Schotz' work, and he has somewhat the same genius for pulling out the essential character of his sitter.





Mother and Child (bronze). By Dora Gordine. Below: Sir Arthur Bliss (silver-bronze). By Maurice Lambert, RA.

There are many more fine portraits. Attention should be paid to the work of Eric Schilsky, Elizabeth Frink and George E. Campbell who shows an excellent head of Denys Lasdun (1208).

Time is short but we must round off with a visit to the showcase in Gallery IX in the hope of finding something by Audrey Blackman and Marion Morris. We are not disappointed: There are three of the exquisite Blackman terra cottas (1347, 1352, 1355), and a porcelain beauty by Marion Morris (1344). Within the small compass these are all works of art. Mrs. Blackman has excelled herself this year with the subtlety of her applied colour.

"MATERIALS AND TECHNIQUES"

The Paper Presented at the British Architects' Conference

IN the introduction to their paper on "Materials and Techniques," which was presented at the British Architects' Conference on May 27 and 28, Messrs. W. A. Allen, ARIBA, and Edward D. Mills, FRIBA, stated that it was not possible in a single paper on building materials and techniques to do more than set the stage for discussion. "This we have attempted," they said, "by focusing attention upon what seem to us to be the significant trends and changes of today, hoping that the Conference will then by discussion sharpen the focus yet further and bring to bear the profession's practical experience to fill in many of the details of the picture." The following extracts are taken from the four sections of their paper:—Part I, The Forces of Nature; Part II, Materials; Part III, Techniques; Part IV, The Broader Picture.

PART I

The Forces of Nature

It has been difficult for us to acclimatise our modern design and construction to conditions on these islands. Much of the trouble arose between the wars, for often what we tried to do then was inspired from abroad, or was new in some way, and did not have built into it, so to speak, the toughness needed here. There are climates harder than ours in particular respects, but conditions in Britain are in general perhaps as hard as any in the world for buildings, and in such a mild climate it is difficult to give full weight to this apparent contradiction.

Fundamentally it is a question of moisture, for we have a persistently moist climate and moisture quickens chemical reactions and facilitates all manner of decay, and leads to all manner of dirtying and of changes of size. Even in the matter of frost, we sometimes suffer more than we expect because of the likelihood of things freezing wet and then breaking instead of freezing dry, harmlessly. And so our buildings—and our architectural ideas—are liable to quick deterioration if we import too indiscriminately and build too optimistically.

One of the really difficult trends of the times is towards the use of impervious materials on walls. This gives us a two-fold problem; it is difficult to make a watertight joint between impermeable materials, and we are much more likely to have instead a good capillary path which will actively draw moisture along it, while at the same time we absorb no moisture on the building face so that there is plenty of water available to enter the joint. The principle is clear; we must use absorbent materials or have perfect jointing. Not only that but with impervious skins we must be prepared to collect the water at the bottom of the building. The run-off can be very heavy.

Defence against the attacks of moisture from the outside are not our only problems of wetness, for we have them in the structure as well. We make many of our building materials in dampness, we often deliver them in dampness, we store them on sites in dampness, and we build them into structures in wet weather, using a great deal of water to join them.

In a moist climate this is to some extent inevitable, and it follows that buildings will generally be very damp when they are new. Even nominally dry constructions only avoid the wetness of wet jointing materials; they cannot escape the atmospheric conditions. And so we must face the fact that we have relatively high moisture contents in our building materials when they are newly in place, and must accept the consequence that in the first year or two of a building's life many of the bits and pieces of which it is made will dry out and get smaller. This has always been true, but to-day it shows more than it has ever done, for we no longer think it abnormal to provide heating, and most of our new buildings are properly warmed. Consequently we have much drier internal climates than we formerly had, as witness the fact that when we put a heating installation into an historic building the first complaint is that all the woodwork, which for perhaps hundreds of years has been perfectly satisfactory, suddenly cracks. But much more than our woodwork cracks these days, so we must try to think our way towards a technique of construction that fits the modern facts.

There is an example in the fundamentally unwise course of employing the aesthetic concept of the flat plane, simple surface when we try to make it by plastering (usually with shrinkable plasters) over a mixture of construction such as clinker block, brickwork and concrete framing, with perhaps an odd bit of wood framing and plasterboard. How can we expect anything but cracking? Every one of these things will pull away from its neighbour unless we are lucky, and our aesthetic objective will slip away out of reach.

It is the easy way, of course, this kind of "plasticine thinking," but it is not good design. To finish right we must start right and think from the structure out to the surface, and from the surface back into the structure, so that the one registers the other properly, and the whole belong harmoniously to the concept of the completed building.

There is a range of deeply important thermal problems in building design. It has, for instance, been very difficult for us to appreciate that a building which looks so fixed and stable, is constantly in motion, changing its dimensions from hour to hour over a range which also varies from summer to winter. If no particular precautions are taken, the amount of movement will be of the order of 1 in. in 150 ft. as between summer high temperature and winter low. Unless it is minimised to a degree which will not ask too much of the elasticity of building elements, there will be cracking of walls and partitions and of the frame if this is concrete. Most of this will take place in the upper storeys where exposure is most severe, and if it takes place in the roof it may fracture the waterproof covering, especially if different parts of the structure next to one another expand at different rates and amounts.

The problem has become severe in our time because we have changed from relatively weak and discontinuous structures to strong and rigidly continuous types; and we use flat, continuous roofs where our fathers used discontinuous weak systems of tiles, metal sheet, and thatch. The latter tended to be foolproof, but the other is far from being so.

It is generally accepted now as part of our technique that we must provide expansion joints (and people who do not provide them generally get them provided in due course by nature); but this, of course, does not stop local troubles between expansion joints for which the only practical treatment is to keep the structure as near to air temperature as possible by such means as the use of light-coloured finishes for roofs to reflect solar heat and thermal insulation to protect the roof structure. Is it generally realised that the difference in surface temperature of asphalt, in sunlight, as between a white and natural dark finish will be anything up to 50 or 60 deg. F., and that between summer and winter it will be over 100 deg. F.?

One of the main points of a basically successful technique is, of course, to keep adjacent parts of the structure to much the same temperature, because contrasts mean differential movements and these lead to fractures. This suggests we must learn to be reasonably consistent in our reflectivities, not having adjacent things very dark and very light, or very different in thermal insulation. Our minds should focus especially on the junctions of walls and roofs—for those are the places most likely to trip us up.

Temperature differences we have always had, rigidly continuous structures we have not. That is what we must now recognise.

These are not the sum total of the natural forces we must respect in working our way towards fundamentally sound building practice, but they include some of the main ones and are at least representative. And the point of all this is that we must work out our building practice so that success "comes natural." All history tells us this is the way to work as a general rule, and that as long as we butt our heads against barriers we will hurt ourselves. The forces of nature will win in the end, and we are better off letting them have their way or side-stepping them, rather than trying to defy them.

PART II

Materials

Now let us turn to the consideration of individual materials. There is no particular significance in the sequence in which they are discussed, except that the most widely established are considered first.

Bricks and other Clay Products

Some English clay brickwork is as lovely as any in the world, and bricks will no doubt continue to be used here in lovely or less lovely ways for a long time to come. But against them at present is some scarcity, apparently high price, high labour content in laying, low thermal insulation, and an inability to meet certain aesthetic demands. We cannot look entirely to substitutes to relieve the difficulties, so we must seek what comfort we may with clay. There are several interesting lines of development.

Perforating bricks is an obvious possibility and is already extensively done in Germany, the USA and elsewhere. The perforations reduce thermal capacity and increase thermal insulation (potentially by some 300-400 per cent.). By the same token they use less clay and can generally be fired more quickly, both because of this and because the holes permit penetration of the

hot kiln gases into the units. The quicker throughput should lower kilning costs and can increase production, and the lighter weight is an asset in transport and handling. There is still something to be learned about the best form of perforation to use for thermal insulation, but there is active Continental research on this aspect, and the Building Research Station is doing all it can to induce British brickmakers to make perforated units. At least one-third of the industry, or some proportion of that order, can change apparently without undue difficulty. This is the kind of situation where architects can really help a great deal by formulating demands, for if they do not no one will, and industry may not move. Local authorities used sometimes to turn down perforated brickwork as too weak, but this is nonsense, as will be evident later when we discuss whole structures.

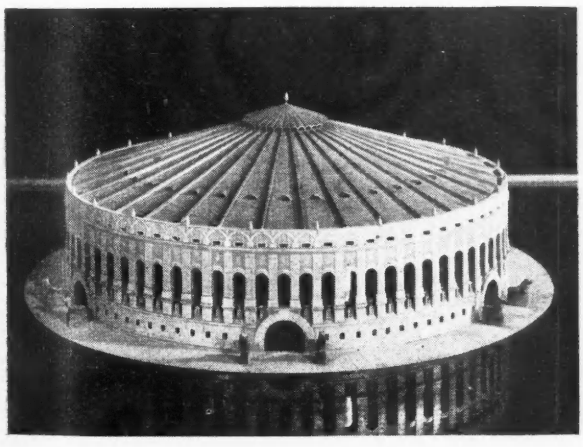
The use of pulverised fuel ash is another very interesting development. Our power stations produce this as waste from the coal burnt in making steam, and at present it amounts to about 2,000,000 tons per annum, enough to fill the Great Hall at Olympia once a month. In 1960 it will be twice this amount. At present it has a negative value and it is very desirable to find a use for it. At the Building Research Station a programme of work is in hand for the British Electricity Authority, and it is now clear that the ash can be used very well, in association with clay, to make bricks. And it could make a great many bricks, a thousand million a year at present.

One of the unexpected things about p.f.a. bricks is that they are very attractive as facers, tending to be medium or darkish reds and greys, indistinguishable from some of the best known makes. Good commons can be made too. The drying shrinkages in manufacture are very small, so that very fast drying and firing schedules are possible. This, together with the basic cheapness of the material, could (like perforation) apparently lower costs, and that lowering we must hope will be passed on to us.

While it is not always impracticable to take ash to the existing brickworks, the fact that in many cases it can usefully form at least as much as 85 per cent. of the body of a brick suggests that the sensible thing to do is mainly to build brickworks at power stations, and bring the clay in if necessary. In other words, treat these brickworks as concomitant parts of power stations. The first experimental brickworks of this kind has just been authorised at Hoddesden, and the output will be used at Harlow. At some of the power stations under consideration, ash output could produce as many as one hundred million bricks per annum, and could thus greatly influence local supplies. The drying shrinkages are small, and this not only should encourage dimensional uniformity but opens up other possibilities such as the production of relatively large clay spandrel slabs. There should be a substantial demand for clay units of this kind for the facing of buildings, and the part they could play will become more evident when we discuss claddings.

One of the substitutes for clays since the war has been the light-weight block, mainly either of foamed slag or clinker, both offering sufficient loadbearing capacity for inner leaf work in housing and improvements in thermal insulation, with reduced thermal capacity. Reluctance on the part of some architects and many local authorities to use them has now been so amply demonstrated in many cases to be nothing more than pointless prejudice and an unwillingness to examine evidence that one hopes—perhaps idly—that there may be a more lively and understanding approach to new developments in the future. At the same time even this remark must be made with an eye to the fact that clinker supplies now are not so easily able to meet demands, and a risk of shortage is so evident for the future that the use of pulverised fuel ash is being developed to make sintered aggregates to take the place of clinker.

Even in the question of block production we have a disappointing comparison to make with the USA. Few, if any, of our light-weight blocks are sufficiently well made to be left exposed to view, but in USA this has become quite a regular practice, both internally and externally, the only finish usually being a cement-based paint, though emulsion paints and oil paints are sometimes used. The authors have seen them in factories, office blocks and housing, and they can be very successful and cheap. Yet it is almost impossible to rely on the British block-making industry to make a consistent block of the right texture, and deliver it without damaged edges. The worst of it is that we see no urge to solve these problems.



BUDAPEST'S NEW WINTER CIRCUS. A permanent building to house Budapest's Winter Circus has been designed by Béla Pinter and is to be built in the People's Park. The building will hold 3,000 *people when completed, and will be* 112 *ft. in diameter and some* 60 *ft. high. There will be a revolving arena which can be raised or lowered at will and can also be flooded for water spectacles. When wild animals are performing, grills round the arena will be erected mechanically at the press of a button. The circus will be air-conditioned.*

Stone

We all know that stone is generally more expensive than brickwork. The cost differential has been increasing steadily for a long time and is now considerable. Yet stone is in many ways a very attractive facing and we want to keep it in our vocabulary not only as a material for the expensive "one-off" job but for more general use. What are the prospects?

Fundamentally, the competitive use of stone depends on improved quarry efficiency to lower the winning cost (which means investment in an uncertain future unless we can establish the market), on having a type of stone easy to work and accepting simple finishes, on avoiding ornamental shapes, and on simplified site work. Stonemasonry as a craft probably plays little part in all this, for the hand dressing of stone can consume a great deal of labour and that is what we must avoid. Probably it means either choosing varieties that can be prepared and used as thin cladding, which will be discussed with other claddings later, or using sawn blocks or hammer-dressed rubble as one leaf of a cavity wall.

There is little more one can say in a general way, except to add that if we want stone, we shall have to get together with the industry not only as individuals but as a profession. Perhaps the first step should be to bring both sides together in a symposium at the Institute.

Concrete

Reinforced concrete came into use in this country about half a century ago. Up to the end of the first world war it was treated as something to be done by specialist firms, and it was, on the whole, done well. It was seldom left exposed, however; most commonly it was rendered. Buildings built then, in that way, have survived well but generally look very drab.

Between the wars sharp changes took place; the specialist firms gave way to general usage by ordinary contractors (who reduced it on the site to labourers' work) and architects decided that here was new raw material for architecture, to be left exposed as a true expression of structure, and reduced in section to the most elegant dimensions possible. Quality of work seemingly went down, but the need for quality went up.

The result has been a very clear demonstration that *in situ* reinforced concrete, used like this, cannot be relied upon to have a trouble-free life of more than about 25 years. And, although our climate is a contributor to its deterioration, similar results occur on the Continent, where even in sheltered places, for instance on pilotis and the roofs they support, great spalls have begun to appear on buildings only 15 to 18 years old.

The weak points in *in situ* work are the thinness of cover over the steel and the unreliability of workmanship. It is clear now that all steel—not just the main bars—should have a cover of probably 1½ in., which will add to cost and often detract from elegance. And as for workmanship, the specification of mixes and water-contents alike are often senselessly ignored on many sites in the presumption that what looks right is likely to be good enough. If we are to use reinforced concrete really successfully in our grammar of contemporary design, then we must not only give the matter a great deal of thought ourselves, but insist upon the industry doing its part to raise standards quickly.

We should not leave *in situ* concrete work without mentioning the development of pre-

fabricated reinforcement. It is somewhat of a mystery that we have waited so long for it. An interesting variant on this theme in the USA is reinforcement for floor slabs supplied welded to corrugated steel sheet which then forms a permanent shutter. It is all very quick and accurate, and specially well suited to situations where suspended ceilings are to be formed. Trends of this kind are bound to develop now.

A real advance here since the war has been in the precasting of concrete facing slabs, and this part of the industry is perhaps now as good as anywhere in the world.

Plaster

Plaster is basically a cheap and versatile material, as old as building itself, but its versatility is not fully exploited yet, nor do we get trouble-free work, so we must stay for a moment to discuss it.

With wet plastering, no doubt the biggest change coming over the field is the introduction of vermiculite aggregates in place of sand. Vermiculite is relatively cheap, and a ready-mixed material by combining it with gypsum plaster is available.

Several functional merits are claimed for this development—reduced condensation, improved sound absorption, and so on—but the biggest legitimate claim is that it is easier to handle and therefore quicker to apply. If we really can get these economic benefits of easier working passed on to us and our clients, it will be a very satisfactory development. But we must keep our eyes open for troubles also.

Plasterboard as a plaster base is worrying some of us. Although shrinkage is said to be so small as to be almost harmless, it does not seem to be so in practice, and especially in the warm and dry buildings we are building now. Small but annoying cracks appear between boards or if some joints hold by scrim, larger cracks open between larger areas. Even nails seem sometimes to get left proud eventually and dislodge spalls of plaster. Is this general experience; and, if so, can the industry help us to cure our troubles?

One answer may be to use it without plaster. The main objection has always been that tape-covered joints look objectionable, but the type of board which is tapered towards the edge is said to be able to be used in such a way that no joint shows. The meeting edges are taped, and a special plaster mix fills across the thinned area flush to the main face, apparently blending to the paper so well that decoration can be applied directly without, as we said, showing the junction. This kind of board has been available here for some time, but has not yet enjoyed the popularity which its counterpart in America seems to be having. It seems that there the jointing is often truly invisible when painted. The question is whether it will be so crack-free here, or shall we be defeated by indifference to good technology?

One of the really interesting post-war developments is the revival of the old stick-and-rag, or fibrous precast plaster technique, and its harnessing to the needs of modern design, both in conventional and prefabricated construction. The Herts schools were in the van here, using it from the outset as a major interior finish for walls and stanchions, where its trueness to shape has served them well. One of the spectacular examples in conventionally-built buildings is the range of ceilings in the main auditorium and lower foyers of the Royal Festival Hall. But many uses, from light fittings to stanchion casings, are now being developed. Obviously we have here a very useful addition to our grammar which we can nourish to our advantage.

A relative of this last family of plaster products is the prefabricated partition unit, each face being made as a plaster casting, with a honeycomb plaster or plaster-covered core. These are in extensive manufacture and, of course, serve a very useful purpose, for they give a finely finished surface, are easily handled and cut, and services can be inserted readily. Units from some factories have shown a tendency to be delivered warped, and this has to be watched. Sound insulation is not too good.

In the same vein are the plasterboard partition units, with two boards joined by a treated cardboard egg-crating. These are astonishingly strong, and could even be used for light roofing. Perhaps if they were made with tapered plasterboard they would be even more useful.

The prefabricated plaster ceiling is being pressed forward. Two types at least have been produced already: vermiculite plaster panels and a gypsum panel perforated to let sound reach an incorporated absorbent. Multi-storey prefabricated buildings call for the development of cheap, prefabricated ceilings, sound-absorbent, simple to fix, and offering adequate fire resistance. Plaster is the obvious product to exploit, and with any luck this problem should be resolved before very long.

Paints

The paint world is changing. Linseed-oil-based paints are substantially dying, being replaced either by linseed oil modified by resins, or by wholly resin-based types. As a class of product they tend to be more sensitive to poor workmanship than the older types of paint, but the finishes, especially the glosses, are so good that the trend is unlikely to be reversed. Troubles which do arise probably spring in the main from inadequate preparation of backgrounds, or other similarly unsuitable conditions. Unfortunately the contractor who knows the need for good preparation and includes for it in his estimating is likely to price himself out of jobs unless we look after this side of specification carefully.

The most obvious exception to this generalisation is the growing use of p.v. acetate emulsions in place of flat distempers, for these emulsions are rather less "touchy" than the things they replace.

Glazed Tiles

Architects have been enjoying during the past few years a mild but not entirely untroubled flirtation with glazed tiles used externally. The range of colours is, of course, exciting and very tempting both for internal and external use.

Internally there is no particular difficulty that we know of except the tendency of tilemakers to let colouring be inconsistent. For some purposes we must have consistent colours, and since Americans seem to be able to get them in tiles, we should set our sights high lest we be defeated not by inherent difficulties but merely by poor technology.

Outdoors we have more of a problem, with all the usual natural forces, moisture and solar heat especially, working against us. In one building examined by the Research Station the light-coloured tiles stayed on but quite a few dark ones fell off. Some came away from the tile mortar, some came with it but without the backing, and some came with the backing and all, leaving only the solid concrete. The fact that they were dark seems to be the key to the problem, suggesting thermal stress as the starting point for trouble; the curious thing is that it should have caused failure in no less than three ways. It is in cases of this kind that we must consider whether we are asking an impractically high standard of technology, or if the industry is giving too low a standard.

Floorings

The world of floorings is in a state of flux. Softwood is freely available once again, so that the struggle between it and thermoplastic tiles for the honour of the best low-cost house floor is on; purchase tax has been extended from the sheet forms of materials such as lino to the tile forms; the floor specialist trades are changing, and new industries are entering the market in a big way.

"Big business" has contributed a new flooring, p.v.c. plastic, in both cut and sheet form. It is in its infancy and there are teething troubles which include some problems of adhesives; but it is a durable, very promising material, now well established in the USA.

Sound Absorbents

The reluctance of architects and their clients to use sound absorbents extensively is one of the mysteries of modern building in this country, though there are signs of more activity now. It is difficult to say whether it is due to the high price of some of the absorbents which ought to be popular, or whether the high price is due to the limited market. Perhaps architects are just not attracted by some of the standard materials, and certainly it is odd that the one material most in evidence in the USA does not appear to be available here at all. This is a travertine-like tile, generally 12 in. square and made of plaster. Most often it is used as a suspended ceiling, the material being grooved accurately along the edges to fit on to a lightweight inverted "T" framing. The result is a ceiling so perfectly jointed that many people think it is ground off *in situ*. It has a highly acceptable texture.

It is unquestionably a fact that the industry is not particularly enterprising in respect of design and development here; what is in more doubt is whether prices are really unreasonable for the size of the market, and if so, whether it is because of unenterprising architects who will not specify, or a lack of interest in a popular market by the suppliers. But we should get these things moving; far too many rooms are spoilt by lack of absorbents.

We are conscious of so many omissions in the list of newer materials, and even among the old there is no mention of timber, which comes later under "techniques." We must look to the Conference to bring into the picture anything which seems significant, but which has received no mention.

PART III

Techniques

Turning now to discuss techniques, we find ourselves in a quickening world, not yet so lively and buoyant in innovation as we hope to see it, but moving forward decidedly in a way which promises well.

The fact is that a real revolution in building is under way this time, partly due to architects, partly to the industry's new interest in better management and organisa-

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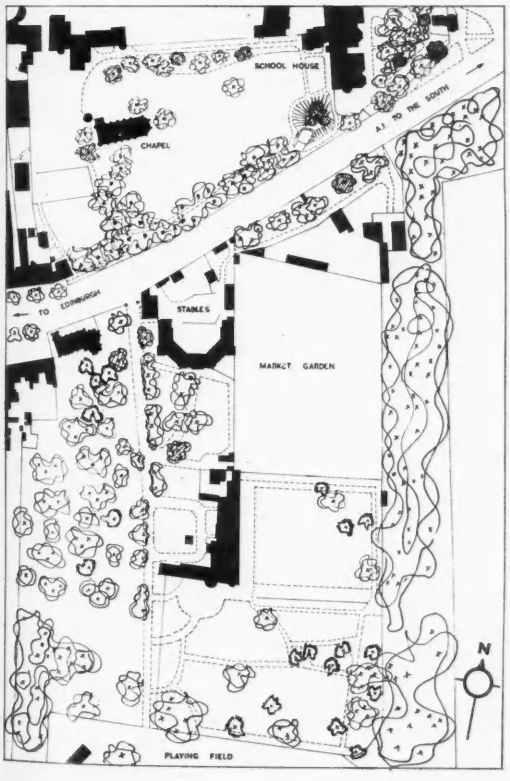
View from the north.



LORETTO SCHOOL

Alterations and Additions to

PINKIE HOUSE

MUSSELBURGH, MIDLOTHIAN

Architects

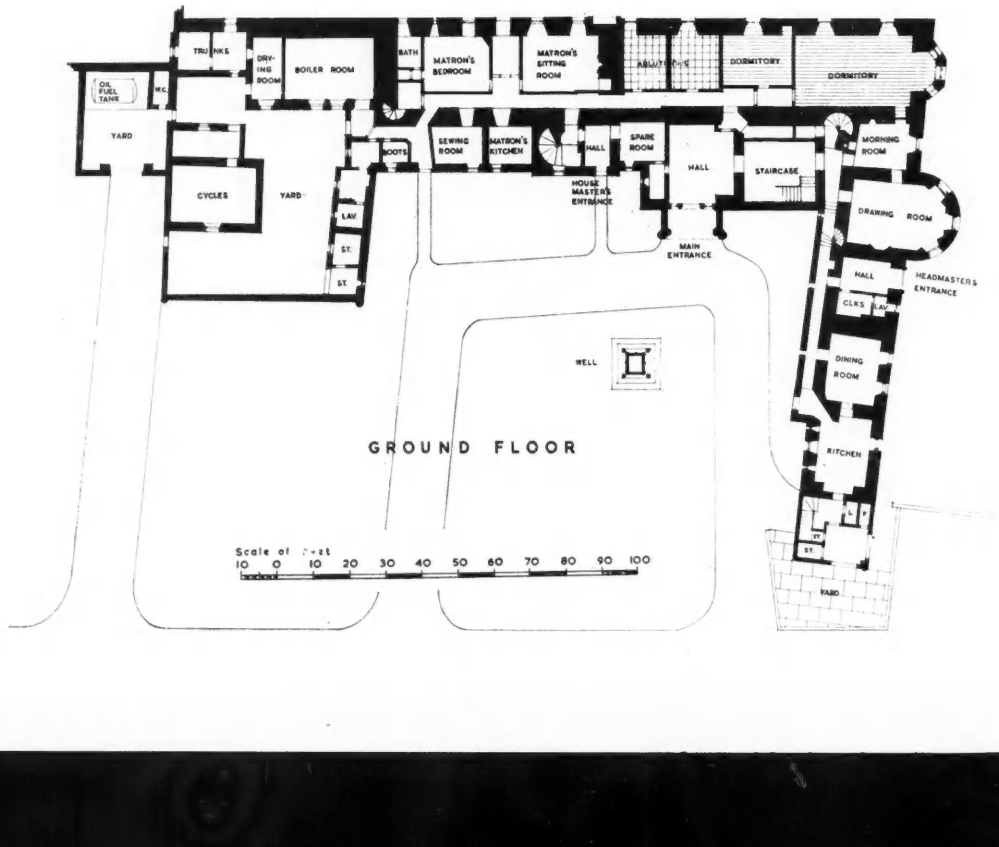
DAVID CARR & STUART MATTHEW, F/ARIBA, F/ARIAS

The main school buildings are shown to the north of the Edinburgh Road on the layout plan. The School House, altered in the Adam style in the mid-18th century, was once the home of Clive of India. The Chapel was built in 1893 to the designs of John Honeyman, and includes work carried out over the past 50 years by the late Sir Robert Lorimer and his partner, Mr. John F. Matthew. Pinkie House is the L-shaped block south of the main road.

View from south-east.

THIS 16th-century mansion and its grounds, which are close to the main buildings of Loretto School, were acquired by the Governors to provide additional accommodation for boys and masters and for additional playing fields. Pinkie is an L-shaped building with east and south fronts overlooking gardens, and has many interesting features, including modelled plaster ceilings, a monumental wellhead at the entrance, and one of the finest painted tempera ceilings in Scotland, but this was in danger of falling into a state of disrepair.

Accommodation was required for the headmaster, a housemaster and 60 boys. Heating, lighting, hot water and plumbing services and considerable



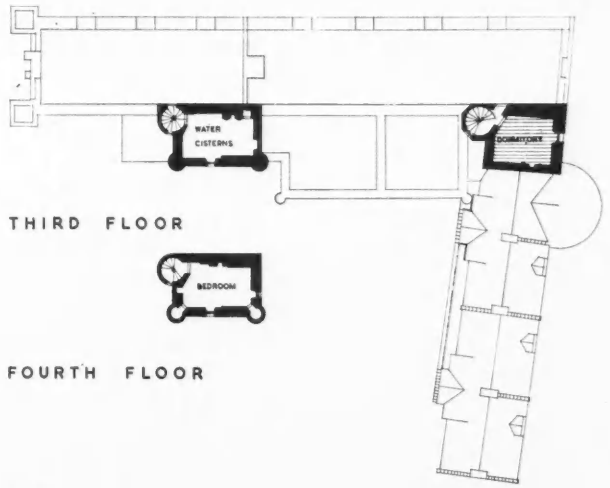
general repairs were essential to provide suitable accommodation, and in order to do this without excessive cost the building was grouped in its natural divisions, and in this way structural alterations were reduced to a minimum.

The headmaster's house is planned in the south wing with public rooms on the ground floor and bedrooms above, all of which overlook the garden to the south. The original pend entrance to the house, which had been built up, was reopened to form the headmaster's entrance hall with glazed double doors designed to fit the segmental arched opening. During these alterations an old slatted wooden window was discovered of the type used before windows were glazed. It was, however, badly affected by woodworm and could not be retained.

At the north end of the main block the housemaster is accommodated on the first and second floors with access up a wide spiral staircase from its own entrance hall at ground-floor level. This planning allowed the fine plastered ceilings in the King's Room, the study and two bedrooms to be grouped effectively in one house. These ceilings, dating from the 17th century, incorporate in their design the crest of Chancellor Seaton. During these alterations a secret spiral staircase was discovered in the thickness of the main gable wall. It was, however, not possible to use it owing to earlier alterations to floor levels which had made access impossible.

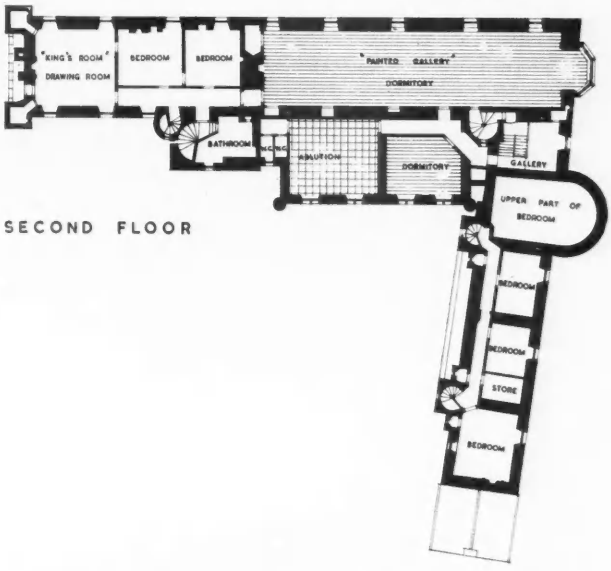
The boys are accommodated in the remainder of the building which consists of dormitories and sanitary accommodation. The largest dormitory on the second floor is a Gallery 85 ft. long, with a fine oriel window at the south end and a curved wooden ceiling painted with allegorical subjects. As elsewhere in the house its timbers were severely attacked by wood beetle and the tempera itself was deteriorating. A fumigation treatment was used to eradicate the wood beetle, and the Ministry of Works undertook the preservation of the painting. During the course of work, further painting was discovered above a plaster ceiling over the oriel window and behind plaster on the walls. These are now visible, and this treatment together with the provision of a hardwood strip flooring and the cleaning and waxing of woodwork have helped to recover something of the original character of the room. Much of this work has been done with generous financial assistance from the Pilgrim Trust.

From the Library, now used as a boys' sitting room, most of the 19th-century bookcases were removed and behind them an example

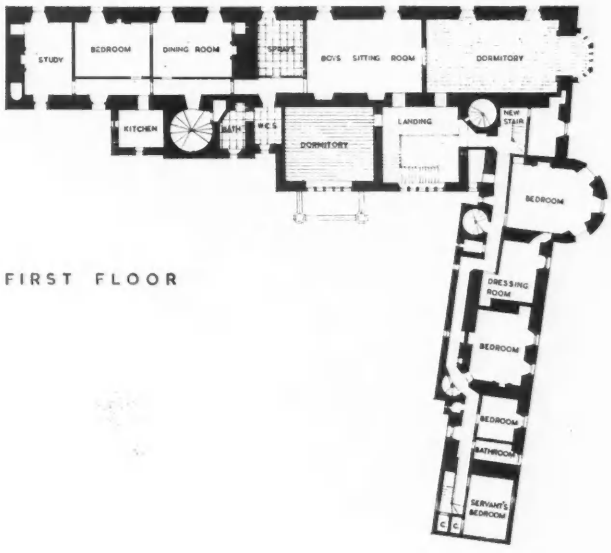


THIRD FLOOR

FOURTH FLOOR

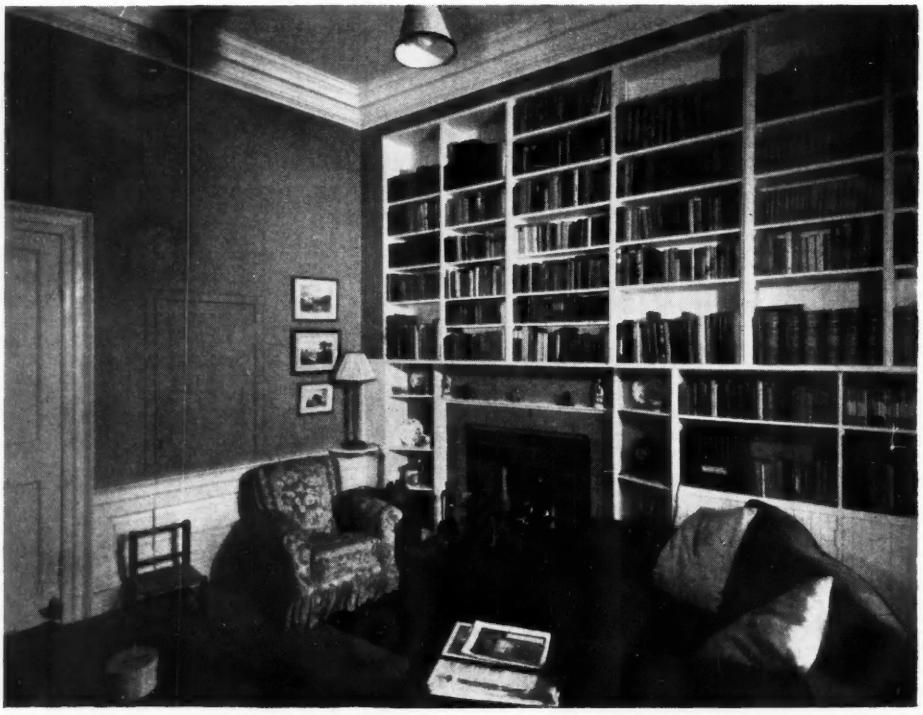


SECOND FLOOR

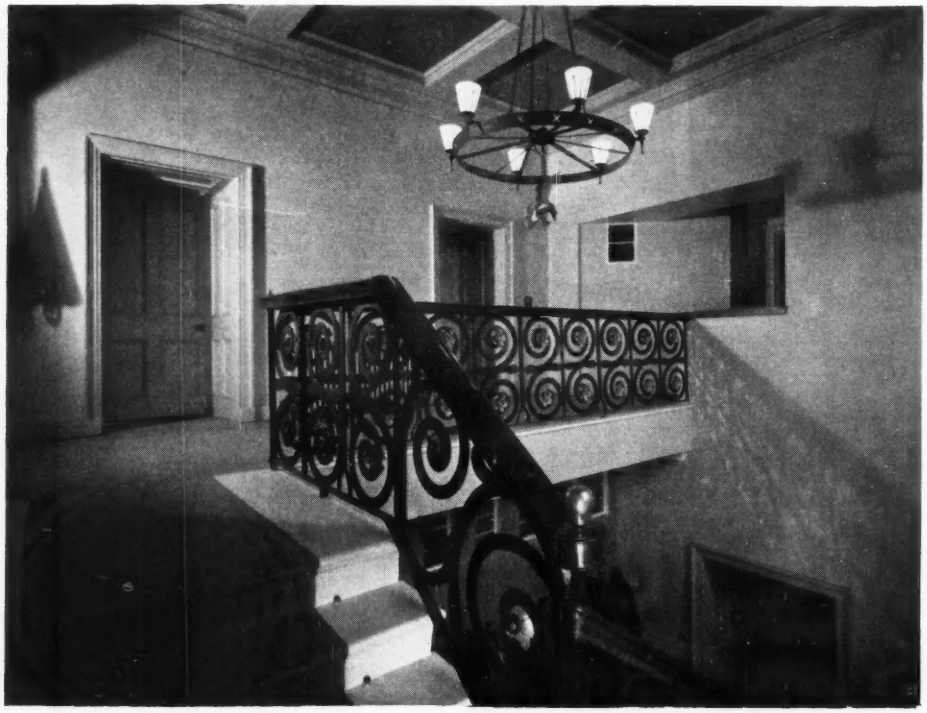


FIRST FLOOR

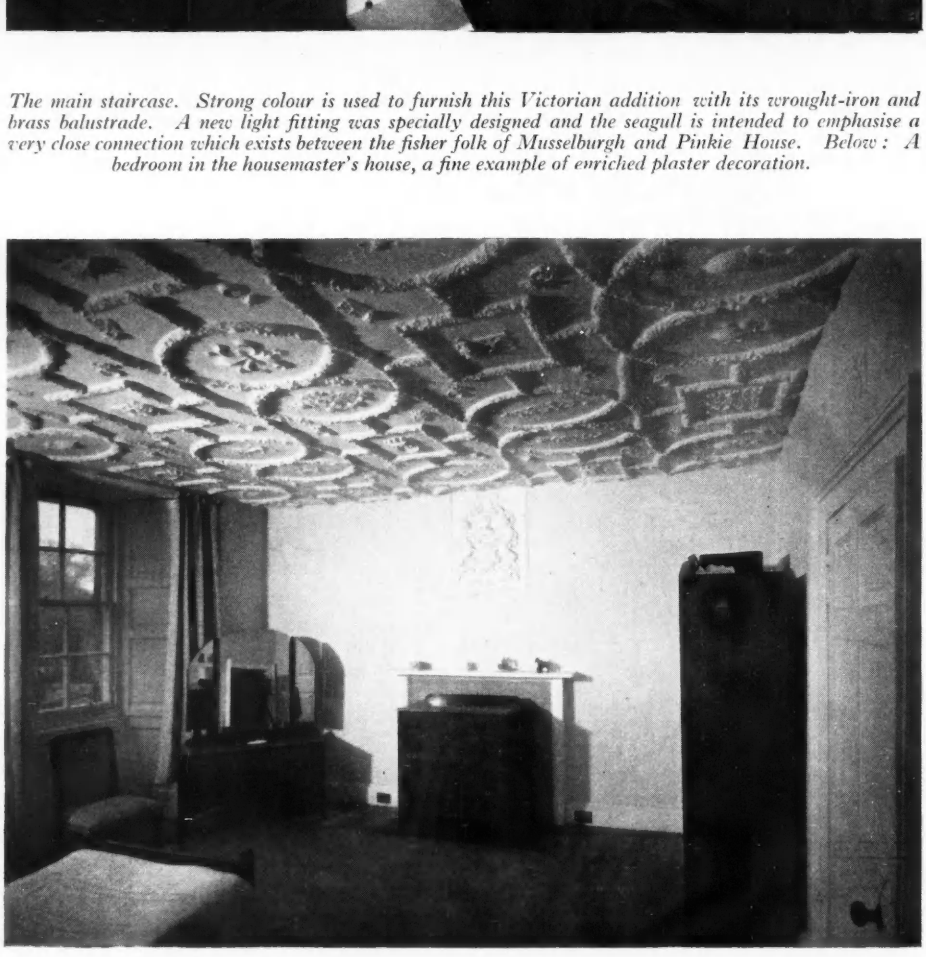
Entrance hall to the headmaster's house. Outside the old entrance gateway to the house still exists ; it had been built up, but has now been reopened and doors fitted. Below : The headmaster's morning room. Bookshelves from the Library (now the boys' sitting room) cover one wall, and are adapted to provide a mantelshelf and shelving round the old stone fire surround with its new tiled interior and slow-burning fire.



The Painted Gallery on the second floor. The preservation of the painted wooden ceiling of this historic room was undertaken by the Ministry of Works with funds provided by the Pilgrim Trust. The paintings, of allegorical subjects, are in tempera.



The main staircase. Strong colour is used to furnish this Victorian addition with its wrought-iron and brass balustrade. A new light fitting was specially designed and the seagull is intended to emphasise a very close connection which exists between the fisher folk of Musselburgh and Pinkie House. Below: A bedroom in the housemaster's house, a fine example of enriched plaster decoration.



The King's Room, whose ceiling dates from the 17th century.

of hand made wallpaper of an early date was revealed. It was badly disfigured in places but enough was recovered to restore a large panel which, treated with a clear varnish, is now a feature of the room. Traces of tempera wall paintings were discovered behind panelling in this room on the original plasterwork. Many features of this type were discovered and where possible were preserved in different parts of the building. In addition several fine hob grates were repaired and re-used in suitable settings.

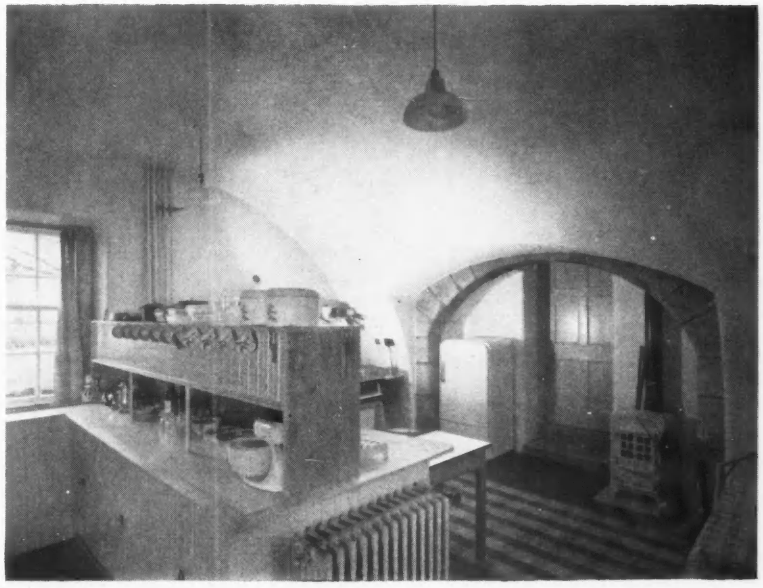
In order to give some uniformity throughout the building electric light fittings of a simple character were specially designed in wrought iron and used with slight variations throughout the house. In general the existing finishes and features were retained but appropriate contemporary finishes were used for such rooms as kitchens & bathrooms.

An old kitchen outside the main structure of the house was adapted as a boiler room and clothes drying room. Hot water is provided for heating and domestic purposes from two oil-fired boilers and a calorifier.

The principal contractors were :—

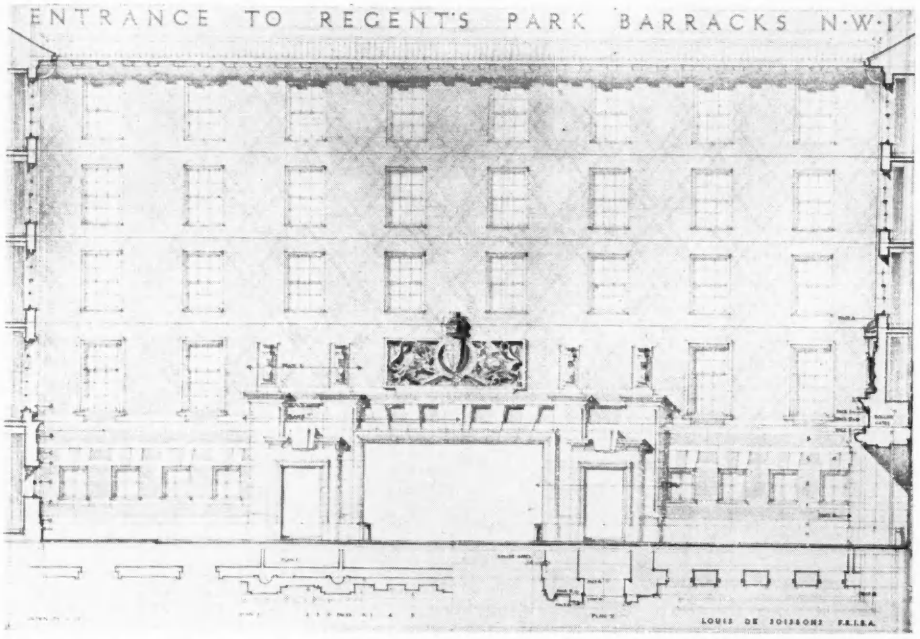
Thomas Graham, Ltd., mason, bricklayer, carpenter and joiner ; D. and J. Borthwick, plasterer ; Wm. Barton and Sons, Ltd., plumber ; James Boyd and Sons, Ltd., heating ; Richard Smith, electrician ; Peter Kelly and Sons, Ltd., slater ; Moxon and Carfrae, Ltd., William Wood, and Hendry, painters ; Chas. Henshaw and Sons, Ltd., wrought-iron work ; James Gray and Son, fireplaces ; and A. M. Macdougall and Son, Ltd., flooring (wood).

The kitchen in the housemaster's house.



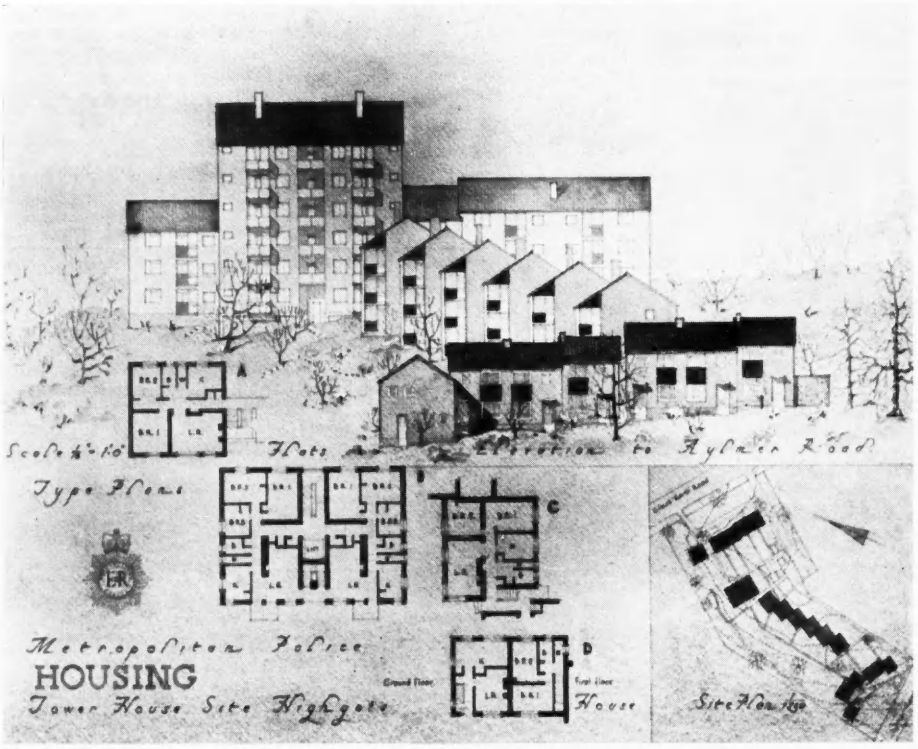
ALTERATIONS AND ADDITIONS TO PINKIE HOUSE, MUSSELBURGH FOR THE GOVERNORS OF LORETTO SCHOOL

ARCHITECTURE AT THE RA SUMMER EXHIBITION



Drawn by Louis de Soissons. *Diploma work deposited on election as an Academician.*

ENTRANCE TO REGENT'S PARK BARRACKS, NW1
Louis de Soissons, OBE, RA, FRIBA, Architect



Drawn by J. Welch.

METROPOLITAN POLICE HOUSING: TOWER HOUSE SITE, HIGHGATE
Sydney J. Hanchet, ARIBA, Architect

y 28 1954

"MATERIALS AND TECHNIQUES"

(*Continued from page* 930.)

tion, partly due to research and partly to the growing *rapport* between all three. It is gathering momentum and will not stop now.

In what follows, we have made only the one broad division as between the external skins — i.e. the claddings — and general constructional systems. This seemed the best way to carry the complex material for discussion.

Claddings

The term "claddings" is of course so wide that it can be used to embrace all outer wallings and roofings, but by common consent it appears now to mean generally the kinds of outer skins which are prefabricated in some degree or are very light in construction. It includes the simple skins which cover the frames of shed-type buildings, and curtain walls, and panel infillings, and lightweight roofing systems.

The problem of the day in cladding is to find tough, inexpensive, durable, colourful sheet materials. Some of the attempts are very interesting. There is for instance the fibreglass reinforced plastic sheet which is translucent and very tough. It is still new and not yet fully appraised. It might have a considerable contribution to make to factory construction, for its toughness and translucency both have merits for factories which are not yet possessed by asbestos cement, for instance, and presumably it will resist corrosion quite well.

Aluminium is of course already in this field and most of its properties are too well known to need attention here. It is most familiar in the form of corrugated sheeting of some kind, but in America it is being pressed as panels (about ⅛ in. thick) for curtain walling. Naturally enough it was used on the Alcoa Building in Pittsburgh, and lately Emery Roth has used it on a new office building in New York.

The problem of a finish for aluminium is perhaps the outstanding difficulty. The pressed panels just mentioned were finished by a technique similar to our anodising, giving a matt surface, generally greyish. Apparently the Alcoa Company maintain that anodising can give a range of colours permanent for exterior use, but whether this will prove so in practice is perhaps not so relevant at the moment as the high cost of the treatment. The aluminium schools in this country have generally been finished by painting with a special treatment.

The fact that a good range of permanent colours is not yet in sight for any of the established sheet materials forces one to look at vitreous enamelling. As it has been produced thus far in Britain it is expensive and to some extent fragile. Now the prospect is brightening, because at least one firm has developed a technique of putting on to metal a single coating not unlike a vitreous material in its general character and durability, and at a relatively moderate price. The sheet is dipped and fired so that both sides are coated and finished simultaneously. The coating is said to fuse into the metal surface, and appears to be very tough as well as resistant to corrosion. In fact it seems likely to make sheet steel a long-life, moderate-cost, low-maintenance material for the first time. If prices, production and range of colours come out as anticipated, we may have here one of the materials for which we have been searching for a long time. It would have numerous uses of course as corrugated sheet and as panelling material for curtain walls, and no doubt in many other places where permanent colour is wanted outside.

Asbestos cement has a traditionally strong place in this market of claddings. It is cheap, easily moulded, resists corrosion, and can be formed in large sizes. One would say that basically it ought to meet a large number of architectural needs. Unfortunately it is brittle in some forms, and at present its only colour is apparently a whitish or middle-grey. No particular attempt has been evident on the industry's part to overcome these disadvantages, especially of colour, or to seek improvements in the shapes and other architectural qualities of asbestos cement, or even to meet the reasonable desires of architects to take advantage of the mouldability of the material in the way of special shapes. In fact architects complain of a "take it or leave it" attitude on the part of the industry. If this is so, what can we do to stimulate the industry to exploit more adequately the possibilities of this material?

Of plastics there is very little new to say. We know they are expensive in large sheet forms, and that the only considerable use they have found is in such buildings as the schools in Herts and Kent, where ingenuity and the strictest economy in fixing methods were able to compensate sufficiently for other costs to bring the material into the picture. Its weathering properties seem not to be too bad after five years' experience, but one wonders why the gloss finish is so assiduously sought by makers, when matt finishes would so often seem to be preferred by architects.

Glass, though as old as the hills, still needs a mention in this context. For one thing, it is now relatively very cheap, having gone up far less than other materials since the war, and therefore it makes the curtain wall of glass a more attractive economic prospect than it formerly was.

As for new types of glass, perhaps the main developments have been the increasing use of anti-sun glass in the USA, the development of double glazing, and—on the horizon—stove-enamelled glass.

Timber

And finally timber, for this is beginning to play a considerable part in claddings, especially on low buildings where its beauty can be registered at close range. African hardwoods and western red cedar and several other woods are now being used extensively on school buildings, generally in vertical strip arrangements and appear to be in the right cost range, though some seem dearer than they ought to be.

Fixing Methods

This seems to cover the main groups of materials serving as outer skins in cladding systems, though no doubt it omits a great many individually interesting products. Now we must move on to consider what holds such materials in place.

Curtain walling systems have been introduced by several British firms lately and at the present rate of development we should be quite nicely served in two or three years' time. One system uses deep, thin box mullions and transomes of aluminium, organised to receive glass direct or in opening lights, or thick composite panels. This frame is simply bolted to the main structure. Then there is a system of patent glazing bars used both as horizontals and verticals, organised to carry glass as the weatherproof skin, with panel infillings for colour and thermal insulation supported on the back side. The former system is just now coming into use and the latter has been used on a number of jobs already. A third system, in galvanised steel flats with aluminium capping sections, forms a very adaptable grid capable of taking glazing and panel infillings of various kinds, and this again is just coming into use here, though it seems at least one job was done with it in the USA some time ago.

The development of these metal proprietary systems makes one ask if wood is not practicable. The answer is seen in the very nice example of softwood timber framing at Harvard University which is a very large window with clear and coloured glass fixed directly into it. On examination by one of the authors no leakage or other trouble could be detected. The relative costs will be worth examining.

Americans have special experience of curtain walls for high buildings which we do not yet possess. Presumably it is something we will have to acquire in connection with some of the new office buildings now being planned over here. Their external coverings for mullions are generally aluminium or stainless steel and their main cladding skins are glass or pressed aluminium.

The United Nations Building was the test ground for modern American curtain walling, and its designers took a courageous, tremendous stride in design, which has unfortunately suffered some difficulties which we must all hope are now overcome.

The building stands, of course, much exposed to high winds and driving rains, and the skin being entirely of glass and unabsorbent, the conditions are specially severe—though no more severe than any building here should have to stand. The factor which seems to have been unexpected is that some of the air forced against the building travels or is sucked upward, carrying with it water which enters into various weep holes, drips, etc., designed for drainage on the normal assumption of downward flow. It has been necessary to carry out extensive remedial measures to seal vulnerable points and joints, which it is now hoped have cured the troubles. It remains the case, however, that in these high, exposed structures we must apparently face the need for virtually completely weather-tight construction if we are going to use non-absorbent curtain walls. It is the difference in absorption between this and conventional materials which creates the special difficulties.

Heavy Cladding

One struggling idea in the heavy cladding class is the surfacing of structural concrete or brickwork with thin sawn stone or precast concrete. Sometimes it works and sometimes not. There is certainly one common point to look out for—this usual question of absorption. Well-made concrete finishes can be relatively unabsorbent; joints, on the other hand, will often invite water to enter by capillary action through the cracks that usually form. The non-absorbent slab leaves plenty of water available for the joints to take up, and they draw it into the interspace between slabs and structural wall where it may weep out through lower joints down the face of the building or find cracks through to the internal finish. We must remember once again that the impermeable unit demands

the perfect joint, and the latter is harder to obtain than the former. There is much to be said then for the rather absorbent stone face; it reduces the free water left to attack the joints, and makes the joints themselves safer by absorption along them.

This is not to decry the excellent development of concrete surface finishes since the war. The Cement and Concrete Association and to some extent the Building Research Station and several individual enterprises have pushed this work forward actively and we now have an industry able to turn out good quality highly attractive precast concrete units at competitive prices. Partly this has been due to the developers of systems for schools, who have made extensive use of stone aggregate finishes on slabs. We seem now at long last to be moving out of the era of the artificial stones which were so prone to crazing. We are not entirely out yet, however.

In the precasting field some of the effort has been put into developing slabs combining concrete faces with insulated backings of wood wool or a special concrete ready to receive a finish nailed in place. These mainly belong to proprietary prefabrication systems at present, but obviously the idea has more general uses providing that the economics are right. Wokingham and Coventry (Broad Lane) Schools have them.

We mentioned in our discussion of clays the fact that pulverised fuel ash and clay combinations might make possible relatively large flat clay sheets, and these, if they can be produced, would seem to have a very useful place as spandrel panels. Presumably they could be colourful and relatively cheap, and certainly they would have the toughness, fire resistance, durability and other properties of the "perfect" cladding, excepting only that they are heavy. But they need not be so very heavy, and some constructions will be able to carry the weight without embarrassment.

Whole Systems of Construction

So much capital is involved in building whole structures that one would not expect many new techniques to be evolved, but the profession and the industry are—relatively speaking—coming alive with ideas, and a surprising number are finding places for themselves. In what follows we discuss site fabrication methods and prefabrication together. It is increasingly illogical to separate them, for the two are blending rapidly.

We will begin with something which in itself is not very exciting architecturally, but concerns large numbers of us, and that is the use of conventional load-bearing construction beyond what has usually been taken to be its limits. At its simplest this is merely the thrusting upward of cavity walling to three, perhaps four, storeys. It is being done here now, but some of the work that one sees vigorously emphasises the increasing need for good workmanship as one puts more than normal house loads on to the construction. In fact you move out of the "traditional" approach into the engineering field as you extend the use of this simple, cavity construction. However, the fact that it all lies within the familiar domestic range of materials and methods suggests that it is likely to be reasonable in cost.

Turning now to framed structures, a first, though relatively mundane, matter is to look at the common steel and reinforced concrete frames, for steel is now back again and the question is which of these two is likely to be our mainstay? On the whole the advantage seems to lie with steel; concrete is slow, the shuttering tends to be expensive, and reinforcing has a heavy labour charge, though prefabrication of it may reduce this. The fact that steel is in fact part-prefabricated gives it a headstart which concrete seems unlikely to be able to overtake.

Concrete may not seem so promising for *in situ* framing, but in some other forms it has a strong position.

The prestressed concrete system, newly developed as part of the Ministry of Education development programme, begins to look as though it may grow into a fine and lusty member of our community of building types.

It has been described in the Press and therefore needs only the briefest of descriptions here. It is a fully prefabricated system, comprising prestressed stanchions of remarkably small section (e.g. 4 in. by 6 in.) considering they run through four storeys, and these carry a flooring system of constant depth precast units, post-stressed into beams capable of classroom spans, decked in concrete slabs, and with precast sound-absorbent plaster ceiling panels. The outer walls are clad in precast concrete slabs with a crushed stone finish, and hardwood windows are used.

Apparently the economics of this system are working out very well and are proving attractive to buyers. Like so many of the other prefabrication systems originating in the British schools world, this can be used for many purposes apart from educational buildings because of its quality, quickness, price and adaptability. The big spans they are organised to give contribute valuably to their adaptability, of course, and so does their ability to be taken several storeys high.

In Scandinavia, and in one or two places elsewhere, efforts have been made to develop precasting techniques for flats by providing whole walls, partitions and floors, fabricated in concrete in a site shop and erected by a gantry travelling over the whole building. The idea of the site shop is sound, for it generally pays in precasting any extensive run of units to have it done on the site rather than to transport finished units. But the gantry is an unwieldy, expensive item, and the idea itself seems to be architecturally rather unsatisfactory.

As a means of getting walls and floors in place, climbing shuttering for *in situ* work holds out basically much more prospect of success, and a trend in this direction seems bound to occur. Its essential advantage is that the three operations of striking, cleaning and re-erecting which are necessary at every lift, with conventional shuttering, are entirely cut out. These often make formwork more expensive than the item being formed inside it. The main limitation of climbing shuttering is that the building must be identical in respect of main elements on each floor.

Buildings are being erected with this system in Hamburg. The shuttering is designed to climb up rods left in the centre of the concrete elements, and wall shutters are joined by decking which provides a working platform over the whole area and eventually is itself the formwork for the roof. The intermediate floors are formed subsequently on telescopic shuttering, held in holes left in the walls. It is a pity the platform cannot be lowered for this part of the job. The shutters climb on automatic hydraulic jacks working uniformly at a 4 in. rise per hour, which represents a storey per 24-hour day.

Curiously enough, shuttering of this general type was in use here twenty years ago or more for silos, but the jacks were mechanical. One wonders at once why it was not developed here to the stage now reached in Germany. Plenty of time was available and the need was evident. Is it once again the lack of imagination at the development stage, which seems so often to hold us up?

Cross-Wall Construction

Cross-wall (or box-frame) construction has been mentioned in the discussion on claddings. It is a strong contender for a place in our general construction practice because of its simplicity and economy, part of which is due to the limited foundationing required. It lends itself well to panel claddings, which lead to secondary economies, and might be a very good system to build by climbing shuttering.

The construction of flats in no-fines concrete is developing now in this country, which pioneered (north of the border) the idea of no-fines concrete. The basic economy comes from the reduced cost of material and from the fact that because it does not build up normal pressure in the formwork you can cast at least two storeys at once, using only lightweight open-mesh shuttering. The shutters are of course large and their arrangement has to be taken into account in design; and they are handled by crane. The usual finish is a rendering, but we discussed earlier the apparent advantages of lightweight claddings.

At Coventry and Birmingham they have used the technique up to four or six storeys, the no-fines walls in the latter being supplemented by dense r.c. framing formed *in situ*. It is an interesting development, but apparently has been much outdone in Germany where heights as great as 19 storeys have been built. The design there is well engineered, the concretes being graded to increase in strength towards the bottom storeys, and the plan being well organised so that plan elements introduce stiffening in particular ways and places to provide the necessary stability. The Germans have made extensive use of no-fines concrete to absorb their war-time rubble.

It will be seen that even while it may very well be that steel is cheaper than concrete for ordinary frames, it is obvious that the versatility of concrete is going to keep it firmly in the picture.

We ignored timber in Part II because as a material it is hardly changing, and anything to be said about it concerns techniques mainly.

The timber shortages of the past 15 years have in a sense deprived us of a generation of experience in the refined engineering use of this material, though the shortages themselves gave rise to some interesting efforts to replace timber by ingenuity, reflected, for instance, in that remarkable plywood aircraft, the "Mosquito." Now that timber is free from control here, the field is wide open for new enterprise in timber construction.

Here in Britain the only really outstanding timber development is for systems designed in the first instance for schools, and now being used, like other school systems, for other purposes. One of the interesting things about these is that they have been developed thus far mainly in terms of imported, rather expensive hardwoods, and even so they proved sharply competitive in costs. Now that the cheaper softwood is freely available again they are obviously in an even stronger position, cost-wise.

The difficulties of fire-proofing timber discourage its use for more than one or two storeys, but within this limitation it is crystal clear that prefabricated wood structures can carve a distinct niche for themselves in modern building in this country. It shows up the advantageous cost characteristics of timber used this way that the combination should be so competitive with other prefabrication here in Britain, where all the timber has to be imported.

Modular Co-ordination

We will finish this discussion of construction with a short note looking forward to something which may come to underlie a great deal of design and construction—modular co-ordination.

Here we only know it in practice now as an influence upon prefabrication in schools and some of the housing work, with big unit dimensions such as 3 ft., 3 ft. 4 in., 4 ft., 4 ft. 6 in., and 8 ft. 3 in., used both for components and grid planning. Other people in other countries know it only or mainly as a small unit of 4 in. or 5 in. size, generally influencing building by lacing together a critical set of building standards. Then, of course, it tends to sweep through building design and construction by interpenetrating it with some semblance of dimensional co-ordination.

It is interesting to look at the European picture more closely, and especially the German sector of it, for the Germans use it more extensively than others in practice. The position there is that a 12.5 cm. module (about 5 in.) is the basic unit in standards for the shell and its components, associated for planning purposes with a 10-cm. module. It is a condition of subsidy for housing work that these are used. Industry appears to be producing the components willingly, and although their use is more successful in some areas than others it is clear that it can work well and then it does seem to lead to economies.

Some day it will come to us, if for no other reason than to clarify the dimensional disarray of building standards. The human mind is like that. But if researches now being carried out show that there are solid economic gains to be had through co-ordination and how to maximise them, a sharper incentive will be given to the standardising side of the matter.

Some formidable questions have to be answered, however, for presumably we will have to have a small module for conventional building work, and this must be related to the large modules needed for prefabrication if we are to avoid perpetual muddle in our standards. Thus we will apparently have to have a basic unit with preferred multiples of it, and no doubt the arguments about the basic unit will be quite warm, for a great deal is at stake. Perhaps all that can safely be said at this moment is that the 4 in. module which is so widely talked of is by no means the only contender worth considering; there is at least one unit either side of it, and perhaps more that have arguments in their favour also. An open mind is now the vital need.

PART IV

The Broader Picture

You cannot prepare a review of this kind without having aroused in your mind views and ideas which set the details in some sort of perspective, and in this final part of our paper we are putting down some of those that seem to us to be important for the profession to be clear about.

One cannot help being struck by the fact that far more initiative and far more inventiveness is being shown in construction than in materials, and that on the materials side the outlook is better in the non-traditional than in the traditional fields. The makers of traditional materials supply the wherewithal for a great bulk of our building programme, and we cannot view any lack of initiative here without great concern.

On the face of it the distinction seems to be between those industries where modern science, engineering and technology are allowed to play their part, and those where we see too little evidence of it. A disappointing spot seems to be just where we are entitled to expect the most responsible approach, namely, in the clay industries, because they are so important. It is not only that we find so few signs of interest in seeing if there are new ways they can serve modern building, but the costs often seem definitely high, though some parts of the industry are, of course, very efficient. Improvements should be possible in other parts, and we should see a better range of products.

Perhaps the fundamental trouble is that brickwork is still substantially unchallenged on overall cost, but if this is the reason it is not one that we can accept as a justification for any easy view of the situation.

Among the dangers in writing a paper of this kind is that of creating an impression that somehow everything is wrong at home and everything is right elsewhere. Possibly this particular paper suggests that Americans or continental people are more active in innovation than we, and perhaps this is the case; but the authors do not set out to suggest it, because it is largely irrelevant, and in any case the evidence would have to be far more complete than they can muster at the moment. The fact is that in some spheres Britain leads, as in prefabrication, while in other branches other countries are ahead. One draws a pattern of light and shade at home, but abroad only the highlights attract us. The point is not to worry about the comparison but to concentrate on anything useful that anybody has to teach and on getting any of our backward industries to move forward.

In much the same vein, it is easy to create an overall impression that the building industry, and especially the materials side, gives a faulty service. We may see shortcomings that we feel ought to be corrected, but in all fairness we must remember that so far as things going wrong are concerned, more troubles are due to misuse than to poor manufacture. We must be as careful to search for faults in ourselves as in others; indeed, self-examination should come first so that the other may have more justification.

And then, in the end we must look at ourselves, and ask some of the same questions. How well are we preparing our students in terms of what we are discussing here? Are we really working at the right level in education when we cannot claim a single post-graduate school in subjects nearer to the heart of architecture than town-planning? And do we older members of the profession yet have the right technique of keeping ourselves alive to modern problems, and in control of the situation?

These are the matters that seem to need some discussion.

SOUTH-EASTERN SOCIETY OF ARCHITECTS

Annual Report

IN presenting the annual report for 1954 of the South Eastern Society of Architects, MR. R. W. PAINE, ARIBA, the retiring president, said the society now had 1,700 members, of whom only about 10 per cent. were actively interested in its work. It was undeniable that the minority were doing excellent work in the cause of better status and opportunity for the profession and in providing social occasions of an interesting kind in which the rest could take part. The majority, however, resolutely refused to be drawn and, so far as could be judged, worked like hermits, without exchange of ideas, happily content to reap whatever benefit the rest might win for them.

"Now it is a fact," he continued, "that however well the arrangements are made for slicing up the architectural cake it will be a poor sort of irony if there is no cake to cut, and this could very well happen."

"It is not uncommon to hear it said of builders that they will price themselves out of a job, but how often does the architect bother to think that he is contributory to this state of affairs? It is a matter which should concern us all very deeply, for the jobs where prices are so high are usually architect-designed. When the builder by himself sets about capturing the low-cost market his organisation is remarkably successful.

"This is one aspect of our job which needs examination. Another is that of quality as measured by cost of maintenance. We are using without sufficient knowledge many new techniques and materials and the results are by no means as happy as they should be.

"I conceive it therefore proper to suggest that the Society in the coming year has two objects to pursue: that which has largely preoccupied it of late, the wider employment of architects, the abolition of quackery and the improvement of status; and another, at least as important, the arousing of all its members to an active study of the two problems I have touched upon.

Formation of Study Groups

"The architect in private practice is not unlike the general practitioner in medicine. He gallops through an exacting series of studies and examinations, he settles down to his job and he is immediately so submerged by daily worries that he is only too glad to avail himself of old recipes in order to keep going. He tells himself in a year or two that he is far too busy to study, he does in fact work so hard at the hum-drum, that he gives himself no time. But I believe he should make time for something akin to post-graduate work and I believe further that one of the finest things this Society could do would be to make it possible, not by any academic, impractical utopian scheme but simply by forming study groups at Chapter level. How much better it would be if, instead of the so often pathetically badly attended lecture by a paint manufacturer's representative for which the average busy architect has nothing but a half-bored contempt, we had a group of practising men getting down to problems, freely sharing experience and helping to build up a code which would pass into a really 'new tradition.'"

JOHN WOOD THE ELDER

Bicentenary Celebrations at Bath

IN Thomas Baldwin's stately eighteenth-century Banqueting Room at the Guildhall, Bath, on Saturday, May 22, the John Wood bicentenary commemoration celebrations were opened by the Mayor of the City (Ald. Major Adrian Hopkins, MC) when he entertained to luncheon a distinguished company of visitors and citizens of which the chief guests were the Italian Ambassador and his wife, and which included also the Danish, Netherlands and Soviet Ambassadors, the Cultural Secretary of the Embassy of the West German Republic, the Cultural Affairs Officer of the USA Embassy, the Bishop of Bath and Wells, the Lord Mayors of Liverpool and Bristol, and a Vice-President of the Royal Institute of British Architects, Mr. E. D. Jefferiss Mathews, OBE.

In a witty speech of welcome, THE MAYOR, introducing his guests, referred to His Excellency the Italian Ambassador as the successor to those Romans who had for 400 years or so in the early days, been Bath's first overseas visitors. It was, on that day, he said, not his intention to do more than give some idea of John Wood's background and a brief picture of Bath at the time Wood commenced to build in the City; in this connection he referred to General George Wade who was sent to Bath at the time of the Jacobite rebellion in the early eighteenth century and who later handed over to the Duke of Monmouth; he pointed out Wood's early association with Ralph Allen, the originator of the improved English postal service and the one responsible for the first quarrying of the Bath stone for Wood's early buildings. In the background of Wood's activities, said the Mayor, was always the, then, Master of Ceremonies, Beau Nash.

Concluding, the Mayor drew attention to the exhibition of Wood's architecture and that of his fellow eighteenth-century architects at the Octagon in Bath, and congratulated the Bath Group of the Bristol Society of Architects upon their excellent work in arranging it so successfully as a part of the John Wood celebrations. Holding up two examples of real acanthus leaf and looking round him at the Corinthian capitals below the ceiling, the Mayor contended that all architects had, of course, drawn them, but very few had ever actually seen one before.

Following the luncheon, rain cancelled the intended unveiling of the bicentenary commemoration tablet on the outside of Wood's house at 24, Queen-square, but the Vice-President of the RIBA, Mr. Jefferiss Mathews, carried out an alternative ceremony at the Wood exhibition in the Octagon by unveiling a portrait of John Wood. MR. MATHEWS spoke of his pride and pleasure in being associated, on behalf of the RIBA, with the Bath bicentenary celebrations and stressed Wood's influence upon our national tradition of architecture to-day. Wood was, he said, an example of the best type of citizen and architect of his time and a challenge to present-day architects to achieve an efficiency of design and structure, beauty and seemliness; responsibility for these things was loose in Wood's time, but was more clearly defined to-day. Wood did no more, said Mr. Mathews, than should be done by architects to-day as good members of society.

In the afternoon the Bath Group of Architects conducted many of the visitors to some of Wood's principal streets and buildings and afterwards entertained them to sherry at the Octagon exhibition.

PLANNING FOR HOUSING

A Paper at the Royal Sanitary Institute

A PAPER on "Planning for Housing" was given on April 27 at the Royal Sanitary Institute's Health Congress, at Scarborough, by MR. S. LEE VINCENT (North Riding of Yorkshire County Planning Officer), in which an attempt was made to describe the planner's functions in relation to housing, and to discuss the principal factors affecting the location and planning of residential areas and the considerations which must be given before deciding upon the form of the proposals. We take the following summary from Mr. Vincent's paper:—

SUMMARY

The purpose of the paper is to consider the function of planning in relation to the housing of the population.

Principal factors affecting the housing problem are the size of the population in relation to the area of the country, the concentration of a large proportion of the population in large urban areas comprising about one-tenth of the total land area, the unsatisfactory and congested conditions under which much of this urban population lives and the urgent need for their alleviation, and the increasing importance of our own agricultural production and the need for preserving as much agricultural land as possible.

The work of planning for housing is considered under three headings: estimates of population changes and distribution, location and character of residential areas, and the planning of new residential development.

Factors influencing population change and distribution are natural growth, and movement from one place to another caused by industrial development or decline, or "overspill" of population from over-large and over-crowded towns and cities.

Different forms of new residential areas described are new neighbourhoods as expansions of existing towns, new detached neighbourhoods of existing towns, new self-contained satellite towns, and expansions of existing small towns and villages not only for their own needs but to form nuclei of "detached neighbourhoods" or satellite towns. The circumstances influencing each form of development are considered, and reference is made to the difficulties in establishing them.

In considering the planning of new resi-

QUEEN SQUARE, BATH, the north side, designed by John Wood the Elder, who lived in the middle house.

dential development, the various forms applicable to different localities are discussed, with particular reference to density. Some increase of density is advocated, but the disadvantages of excessively high densities are pointed out. Recommendations are made for density standards capable of producing satisfactory development with economy in use of land and in services; and for a greater variety in types of housing accommodation.

Roads for residential areas are referred to, with some emphasis on the necessity for economy without depriving houses of adequate access.

The importance of economy in the taking of agricultural land for development is stressed, but it is pointed out that the growth of population and the need for improving the living conditions of much of the present population render the use for development of large areas of agricultural land inevitable.

MIX DESIGN OF CONCRETE

A Three-Day Symposium

A SYMPOSIUM on mix design and quality control of concrete took place at the Empire Rooms, Tottenham Court-road, London, from May 11-13. It was arranged by the Cement and Concrete Association and 22 papers were presented. Dr. A. R. Collins, MBE, MICE, MIStructE, technical director of the Association, presided. The introductory address was given by Dr. W. A. GLANVILLE, CB, CBE, MICE, MIStructE, director of the Road Research Laboratory, and following are extracts from his remarks:—

In all structural materials complete uniformity of properties is unattainable. Uniformity depends on many things and is easier to obtain with some materials than with others. Steel, for example, is usually more uniform than concrete and concrete more uniform that stabilised soil. But however great or small, the variability and its magnitude should be known by the engineer so that he can design his structures with the least possible waste. This implies a statistical approach. The statistical approach is now evident in the growing use in concrete work of the methods of quality control used to maintain standards with factory products. As with mix design, the part of the symposium dealing with quality control indicates a broadening of the field. In a number of papers it is considered in relation to structural design, to precast concrete compaction, roads, airfields, dams and ready-mixed concrete. To be acceptable a statistical approach must be based on adequate data under practical conditions, and it is clear that a growing volume of reliable test data is becoming available.

Future Developments

Since the development of mix design and quality control procedures is necessarily based on test data, it is appropriate that the subject of testing concrete should be included in this symposium. It is particularly to be noted that the non-destructive testing of concrete will receive attention. The advances made in recent years in this field of concrete technology are likely to have important repercussions on the quality of construction work since the methods of test enable the actual concrete in a structure to be tested and its *in situ* quality assessed.

It may be useful to consider the manner in which future developments may take place. All those concerned with the production and use of concrete will recognise that there is room for much improvement. It is still not uncommon to see materials being batched by volume and old, worn out and inefficient plant being used. Some of our contractors' organisations, especially the large ones, are fully conscious of the advantages accruing from good mix design and quality control and it is to be hoped that their splendid example in applying the necessary techniques will spread to the whole of the construction industry. Perhaps the most important need at present is for skilled, continuous and detailed supervision of all the operations. Care and skill put into designs and specifications can be completely wasted by inferior workmanship and supervision on the job. The difference between good and bad workmanship and supervision may well be represented by the difference between an almost indefinite life and a life of only a few years.

There is still room for further research and development. The statistical examination of the larger quantity of data now becoming available will indicate with increasing precision the relative importance of the control operations. There is a need for better meters to measure the amount of moisture in the aggregates, for improved methods of testing the workability of concrete in the field and for the development of quality control charts to facilitate field control. I imagine, also, that the manufacturers and producers of the constituent materials could help forward general progress by considering the way in which control measures or modified production techniques might help to produce more uniform ingredients of the concrete.

The scope and variety of the papers presented to this gathering show how much progress has been made in recent years and the numbers of those attending shows how keen the engineer of to-day is to make use of the latest findings of research and of the experience of his colleagues.

The Papers Read

Following is a list of the papers read at the symposium and their authors:—

Basic Principles of Concrete Mix Design, by J. D. McIntosh; Concrete Mixes for Various Building Purposes, by Norman Davey; Design of High-Strength Concrete Mixes, by H. C. Erntroy and B. W. Shacklock; The Design of Concrete Mixes on the Basis of Flexural Strength, by P. J. F. Wright; Mix Design and Abrasion Resistance of Concrete, by C. L. a'Court; Mix Design for Frost Resistance and Methods of Specifying Concrete, by A. R. Collins; Design of Concrete Mixes for Compaction by Surface Vibrators, by R. H. H. Kirkham; The Effect of the Vacuum Process on Concrete Mix Design, by D. F. Orchard.

Steam Curing and Its Effect Upon Mix Design, by A. G. A. Saul; A Classification of Natural Sands and Its Use in Concrete Mix Design, by A. J. Newman and D. C. Teychenné; The Control of Concrete Quality—A Review of the Present Position, by F. N. Sparkes; Methods of Achieving Control of Quality, by L. J. Murdock; Control of Concrete Quality on the Small Site, by J. H. Spanton; Quality Control and Its Effect on Structural Design, by F. G. Thomas; Quality Control for Precast Concrete, by F. Cornelius; Economic Factors in the Choice of Aggregate Grading in Relation to Quality Control, by D. A. Stewart; Quality Control for Road and Airfield Construction, by J. M. Fisher; Quality Control for Mass Concrete with Special Reference to Dams and Related Hydraulic Structures, by William Dick; Ready-Mixed Concrete—Quality Control Refinements, by L. Boyd Mercer; Some Problems Involved in Destructive and Non-Destructive Testing of Concrete, by R. Jones and P. J. F. Wright; The Application of Statistics to Concrete Quality, by F. R. Himsworth.

The Cement and Concrete Association has now opened a new office at 11, Albert-square, Manchester, 2 (Tel.: Blackfriars 2525/6) in charge of which is Mr. B. Boothby, who was formerly Press and Public Relations Officer to the Association. This post is now held by Mr. P. J. Witt.

LAW REPORT

Ancient Lights Claim: Inquiry Ordered to Assess Damages

CHANCERY DIVISION.

BEFORE MR. JUSTICE UPJOHN.

E. T. Jones v. C. M. Jones and T. G. M. Jones.

IN an "ancient lights" action in the Chancery Division on May 21, Mr. Justice Upjohn held that a newly erected garage obstructed the light of a sitting-room of an adjacent dwelling-house. He directed that there should be an inquiry as to damages, and refused to order the obstructing portions of the garage to be pulled down.

Mr. Ellis Thomas Jones, of Trem Hirnant, Plasey-street, Bala, Merioneth, sued Mr. Charles Morris Jones and Mr. Thomas Glyn Morris Jones, trading as Jones Bros., garage proprietors, of Henblas, Bala, claiming an injunction restraining them from proceeding with the erection of a building on land adjacent to his house so as to cause nuisance or obstruct the ancient lights of the house. He also asked for an order for the demolition of such part of the building as constituted a nuisance or obstruction to the light of Trem Hirnant.

Plaintiff contended that the erection of the building had considerably reduced the light in his house, and artificial lighting had to be switched on earlier in the evening.

Defendants denied that nuisance had been caused to the plaintiff. The building, they said, was a single-storey prefabricated steel and asbestos structure intended to be used as a tractor and commercial vehicle service and spares depot.

It was being erected under planning permission granted by Merioneth County Council and in accordance with plans approved by Bala UDC under building by-laws, and in pursuance of a building licence granted by the Ministry of Works. Materials had cost £2,850, and although the work was started in October, 1952, the plaintiff made no complaint until April 25, 1953. It was not practicable, without undue expense, to lower the height of the building.

Mr. Justice Upjohn, giving judgment, said that although planning permission and a building licence for the erection of the prefabricated garage were regularly obtained, nothing turned upon that.

The question was whether a diminution of light in the sitting-room constituted an actionable nuisance or whether it was something which the plaintiff must endure. It was a small room with a small window, but on the whole, although it was a borderline case, his lordship thought that the plaintiff was entitled to complain.

Discussing whether plaintiff was entitled to a mandatory injunction, Mr. Justice Upjohn said an important consideration was that although he complained in April he did nothing whatever to enforce his rights until August. A person who asked for a mandatory order must be particularly alive to the enforcement of his rights, even in the case of a prefabricated building, and it was his duty to come quickly to the court and ask for relief.

"On the whole I think it is a case for damages rather than an injunction," added Mr. Justice Upjohn. "I propose to order an inquiry as to damages in respect of the sitting-room."

Plaintiff was awarded seven-eighths of his costs, the cost of the inquiry to be reserved.

THE HOUSING REPAIRS AND RENTS BILL

An Explanation of the Principal Provisions

[By a Correspondent]

AFTER an acrimonious passage through the Commons, the Housing Repairs and Rents Bill is expected to pass quickly through the Lords and to be on the statute book within a matter of weeks. The Bill will not affect the overall demand for building labour—no Act of Parliament can alter the fact that there are hundreds of thousands of housing applicants on the local authorities' waiting lists—but it will tend to place the emphasis rather on repair and improvement than upon new building. Additional houses there must be, and the Minister of Housing and Local Government is committed to a slum clearance programme, but he is also committed to the policy of maintenance and improvement set forth in the White Paper "Houses — The Next Step."

It is not only the local authorities which will be brought into the new housing drive. The prospect of increased rents may encourage private owners to spend money on repairs, and the lifting of rent control from new houses may result in privately owned dwellings being built for letting.

Accumulated Repairs

Repairs on some privately owned properties have accumulated to such an extent that the owners are now left with only two alternatives: either to sell the property as it stands to the local authority, or to retain ownership and do the repairs themselves. A local authority acquiring and repairing property will not be restricted as to the amount of rent they may charge. Private owners, though they may charge increased rent, will still be restricted, and an owner faced with the alternatives of selling or repairing must consider whether the financial incentive offered by the Bill is sufficient. One speaker described this incentive as nothing more than a "mouldy old turnip," whilst, on another occasion, he suggested that it would provide a rich harvest for the landlords! It is not possible to generalise, and each case must be considered on its own.

The Government have accepted the view of the Girdwood Committee that repairs to-day cost three times what they did before the War, and it is one of the objects of the Bill to permit rent increases to cover the additional cost of repairs when these have been executed. Repairs allowances, which were last revised in 1928, are calculated under the Rating and Valuation Acts, which provide that for each dwelling-house a gross value shall be assessed by reference to the rent which the property might command from year to year if the tenant paid the rates and the landlord did repairs. From this gross value a repairs deduction is made on a sliding scale to arrive at the rateable value on which rates are paid.

Conditions for Rent Increase

To ascertain how much he will be required to spend upon repairs to qualify to receive a rent increase and the amount of such increase, an owner should first obtain from the rating authority the *gross* value of the property. Before he can charge an increased rent he must be in a position to show that during the preceding 12 months he has spent on repairs not less than three times the amount of the repairs deduction or, alternatively, that over the past three years he has spent not less than six times the amount of this deduction. Having established, on one ground or another, that he is entitled to make a repairs increase to the existing rent, the owner may continue to charge the increased rent indefinitely without the necessity of any further proof, though he must, of course, maintain the house in a satisfactory condition of repair. The amount of the increase is normally twice the amount of the statutory repairs deduction, though this may be reduced if the landlord is not responsible for all repairs and the Bill contains an overriding provision that the rent shall not be increased to more than twice the gross value.

These provisions may appear complicated, but an owner who has first informed himself of the *gross* value of a property for rating purposes can ascertain his position by reference to the following table, which applies to dwellings in the provinces. The London scales differ where the gross values exceed £21.

Gross values		Alternative qualifications for repairs increase—amount expended on repairs		Annual rent	
Exceeding	Not Exceeding	In period of 12 months	Over past three years	Normal permitted increase	Overriding maximum
£	£	£	£	£	Twice the gross value of the dwelling appearing in the Valuation List one month after the passing of the Housing Repairs and Rents Bill.
1	3	3	6	2	
3	6	6	12	4	
6	8	9	18	6	
8	11	12	24	8	
11	13	15	30	10	
13	16	18	36	12	
16	29	21	42	14	
29	33	24	48	16	
33	37	27	54	18	
37	52	30	60	20	
52	57	33	66	22	
57	62	36	72	24	
62	67	39	78	26	
67	72	42	84	28	
72	77	45	90	30	
77	82	48	96	32	
82	87	51	102	34	
87	92	54	108	36	
92	97	57	114	38	
97	102	60	120	40	
102	108	63	126	42	
108	114	66	132	44	
114	120	69	138	46	
120	—	72	144	48	

Improvement Grants

The repairs increases permitted under the Bill have been the subject of acute political controversy, but the revised code under which owners may qualify to receive improvement grants has commanded agreement amongst all parties. This new code is contained partly in the Bill itself, which further amends the Housing Act, 1949, and partly in Circular 36/54 issued by the Ministry of Housing and Local Government on April 20. Owners cannot demand improvement grants as of right, but the Minister asks all local authorities "to consider in a helpful and constructive manner the projects that they receive," and he expresses confidence that the greater freedom of action they are now given will assist them in doing so. The extent to which the improvement grant provisions of the Housing Act, 1949, have been widened, and that increased discretion has been accorded to the local housing authorities will be appreciated from the following comparative table:—

	ORIGINAL CODE.	REVISED CODE.
1.	Grants available towards cost of improvements to property likely to provide satisfactory housing accommodation for not less than 30 years.	Grants available if life of property is likely to exceed ten years.
2.	Applicant must have an absolute or leasehold interest of not less than 30 years.	Applicant need have an interest for a period no longer than that during which the property is estimated to provide satisfactory housing accommodation.
3.	Grants of up to 50 per cent. available towards improvements costing between £150 and £800 with special provision for exceptional cases.	Grants of up to 50 per cent. or £400 (whichever is the less) available in respect of improvements costing £100 or more without any upper limit. Special provision for exceptional cases continued.
4.	No provision for inclusion of professional fees in cost of improvement works.	Fees of architect, engineer, surveyor, land agent or other person employed in an advisory or supervisory capacity may be included.
5.	Permitted rent increase in the case of improved houses which had been let within the preceding five years limited to six per cent. of the cost to the owner of improvements made (i.e., cost of improvements less improvement grant). In the case of houses not let in the preceding five years, including agricultural tied cottages, the local authority required to fix maximum rent.	Permitted rent increase raised from six per cent. to eight per cent. of net cost of improvements. Local housing authorities required to fix maximum rents for all houses which are, or which on a letting thereof would become, dwelling houses to which the Increase of Rent and Mortgage Interest (Restrictions) Act, 1920, applies. In fixing rents the local authority to have regard to the age of the building, to the character and condition of the dwelling after the carrying out of the proposed improvement works, and to the cost of those works.
6.	Before commencing work applicants required to submit a short description with a plan and estimates for the approval of the local housing authority who, in turn, submit these details, together with their recommendation, to the Principal Regional Officer of the Ministry of Housing and Local Government.	Approval of proposed works by the local housing authority prior to commencement still necessary, but decisions on applications may be given by the local Council without reference to the Ministry save in exceptional cases.
7.	Local housing authority to regard works of improvement to be undertaken in a particular period as part of their own approved programme of new house building and to restrict approvals so far as may be necessary having regard to the labour and material resources of the building industry in their area.	This restriction is now removed.
8.	To qualify for grant applicants should be able to show that their proposals would result in the provision of dwellings which would meet the requirements recommended by the Standards of Fitness for Habitation Sub-Committee of the Central Housing Advisory Committee.	The new requirements, set out in the following paragraph, are less onerous in that it is no longer essential that facilities for domestic washing, including a copper, should be provided, preferably in a separate room; the provision of a separate and well-ventilated larder or food store is waived and it is unnecessary to have a satisfactorily surfaced path to out-buildings.

The revised standards, to which an applicant for an improvement grant must be prepared to conform, slightly amplify the Standards of Fitness for Human Habitation

set forth in Clause 9 of the Bill. Each dwelling must, after improvement or conversion:—

(i) Be in a good state of repair and substantially free from damp.
(ii) Have each room properly lighted and ventilated.
(iii) Have an adequate supply of wholesome water laid on inside the dwelling.
(iv) Be provided with efficient and adequate means of supplying hot water for domestic purposes.
(v) Have an internal or otherwise readily accessible water closet.
(vi) Have a fixed bath (or shower) preferably in a separate room.
(vii) Be provided with a sink or sinks and with suitable arrangements for the disposal of waste water.
(viii) Have a proper drainage system.
(ix) Be provided in each room with adequate points for gas or electric lighting (where reasonably available).
(x) Be provided with adequate facilities for heating.
(xi) Have satisfactory facilities for storing, preparing and cooking food.
(xii) Have proper provision for the storage of fuel (where required).

Advantages of New Requirements

Any of these requirements may be waived only with the specific approval of the Ministry of Housing and Local Government. The new code should meet many of the criticisms which have been made of the old arrangements. The reduction from 30 to 10 years of the maximum "life" of a property eligible for improvement and the corresponding reduction in the period in which the applicant has an absolute interest should considerably widen the range of potential grant applications and, though a "life" of more than 10 years will normally be expected, there may be odd houses the anticipated life of which is foreshortened by road improvement or other works but which are likely to remain standing for the next 10 years and will become eligible for grant improvement. Final consideration by the local housing authority without reference to the Ministry should do much to speed up the approval of applications, and the removal of the upper limit of improvement expense avoids the difficulty of having to distinguish between the cost of improvement and of repairs.

The fact that an owner has a mortgage outstanding on a property he proposes to improve, does not debar him from applying for grant. The prohibition of the making of improvement grants for agricultural tied cottages was removed in 1952, but other accommodation occupied under a contract of service remains ineligible for improvement grant. Thus, caretakers' cottages or flats cannot be made the subject of improvement grant applications so long as the caretakers remain licensees whose right to occupy the accommodation runs with their contract of service.

Repairs Increase "Scarcely Fair to Landlords"

AN examination of the Housing Repairs and Rents Bill (now being considered by the House of Lords after its passage through the Commons) was made by Mr. A. E. Telling, MA, Barrister-at-Law, in a paper given at the National Housing and Town Planning Council's London Regional Conference, held at the RIBA on Wednesday (May 26).

By way of conclusion, MR. TELLING said that two questions suggested themselves: Were the conditions which had to be fulfilled, in order to obtain the repairs increase, too onerous? Was the repairs increase sufficient in amount?

"As to the first of these questions," said Mr. Telling, "I think that there is no doubt that many houses will fail to qualify for the repairs increase. In some cases the landlord may be unable to make the necessary declaration as to the amount spent during the qualifying period, and a Government amendment to be proposed in the House of Lords will make it a punishable offence to make a wilfully false statement on this point. It will not be an offence to claim that the house is reasonably suitable for occupation having regard to the matters specified; but, even if the landlord does make that claim, there will be many cases in which the tenant will be able to get a certificate of disrepair.

"Nevertheless, as we have seen, the local authority have considerable powers of compulsion and of carrying out work in default. This may seem a harsh view having regard to the fact that many houses are owned by elderly widows and old age pensioners, but there is an important mitigating circumstance. Even if the local authority have to exercise their default powers and recover the expenditure by instalments, the landlord will be able at once to obtain the repairs increase in most cases as all the conditions (with the possible exception of 'good repair') will now have been fulfilled. The Bill does not say that the qualifying expenditure must actually have been met by the landlord. The position with regard to the improvements increase under the Act of 1920, however, is rather more obscure. For these reasons, I do not think that it is a serious criticism of the Bill that the qualifying conditions are somewhat onerous.

"The answer to the second question, however, is less satisfactory. The Government fixed the increase at twice the amount of the statutory deduction on the basis that the statutory deduction was a reasonable figure in 1939 and that repair costs have increased about three times. The Girdwood Committee on whose estimates the Government rely prepared an index of repair costs showing 1939 as 100; on that basis the index had risen by the date of the Committee's report (April, 1953) to 316 in Grade A districts. Building trade wages have, however, risen since then on two occasions, and with increasing freight costs materials prices may rise considerably in the near future. Moreover, the proportionate increase since 1939 in the Grade B districts has been greater than in the Grade A districts."

Mr. Telling added that another criticism of this all "too finely calculated" repairs increase was that it made no allowance for the deterioration of property as a result of nearly 15 years of strict control during which period repair costs had steadily increased to their present level. One did not need to hold a brief for landlords to feel that it was scarcely fair to tell them that they could have an increase in rent sufficient to cover current repairs, provided they first put the property into good repair out of rents which were too small even for current repairs let alone the making good of accumulated defects.

Research on Decorating

A market survey report on painting and decorating, prepared by the Odhams Research Department, has been issued by the "Daily Herald," 96, Long Acre, WC2. The report deals with the painting and decorating of both the inside and outside of the home and of furniture, the types of decorating done, by whom it was done and the brands of paint and other products used. During the first eight months of 1953, the period covered by the survey, 63 per cent. of all householders had some painting and decorating done.

BUILDING IN EUROPE

ECE Quarterly Bulletin Published

THE United Nations Economic Commission for Europe's Quarterly Bulletin of Housing and Building Statistics, published in Geneva on May 14, shows expanding dwelling construction in almost all European countries. The increase in the past year is particularly striking in France, Western Germany, Italy and the United Kingdom.

The general upward trend is revealed by a comparison of the number of dwellings begun or authorised, completed and under construction during the fourth quarter of 1953 and the whole year 1953 with the number for those periods in 1952. Data on work begun or authorised indicate that the tendency towards increased dwelling construction will continue in the immediate future. Available figures suggest that residential building decreased only in Finland and Hungary.

Higher non-residential building is shown in the Netherlands, Norway and the United Kingdom. A slightly lower output in the non-residential sector is reported in the case of Denmark, Finland and Western Germany. Data suggest that on the whole the expansion of residential building was achieved without a contraction in non-residential building.

The upward trend in both residential and non-residential building has been accompanied by an increase in the output of cement in practically all European countries, according to ECE figures comparing 1953 cement production with that of 1952.

In most countries the over-all building cost index is either stable or shows a tendency to fall. The breakdown in the ECE bulletin of total costs into materials and wages shows that the drop resulted mostly from a decrease in the costs of building materials, as wages appear to be stable or increasing.

A BUILDING EXPERIMENT

Bucks Plan to Reduce Costs

IN an endeavour to reduce the time taken in building new schools and to reduce costs, Bucks County Council have agreed to allow their architect, Mr. Frederick B. Pooley, ARIBA, and chief education officer, Mr. D. E. Cooke, to collaborate with the Ministry of Education on the design of a new school, using traditional methods of construction and new ideas on education planning.

In ordinary circumstances a builder is often unaware that he is likely to be engaged until a few weeks before work is due to begin, and this causes delay, it is stated.

In the new experiment the council will select a contractor to work with the architect from the early stages, thus enabling the job to be pre-planned. Particular care is to be taken in the designing of the school so that every possible use can be made of modern mechanical equipment.

The contractor will be bound by an ordinary contract and the council will have an early opportunity of ascertaining that his prices are fair and reasonable, and he will be required to make his books for the contract available for the authorities' auditors.

School Building

Warwickshire Education Committee have decided to spend £2,434,000 on its building programme for 1955-56. This includes the building of 13 secondary schools and three grammar schools.

QUESTIONS THAT PERPLEX THE INDUSTRY

Straightforward Answers at LMBA Brains Trust

STRAIGHTFORWARD answers to some of the difficult questions that perplex the minds of builders, and others in the industry, were given at the Brains Trust organised by LMBA Central Area No. 1, following their lunch at Derry and Toms' Restaurant, Kensington, on May 19, at which Mr. Peter Trench, OBE, chairman of the Area, was in the chair. The Question Master, for the second year in succession, was Mr. I. M. Leslie, OBE, Hon. ARIBA (Editor, *The Builder*), who presided over a team consisting of three builders, Messrs. N. S. Farrow, L. J. Holloway and F. A. L. Collis; and three representatives of the professions, Messrs. A. R. F. Anderson, FRIBA (architect), C. Kennard (district surveyor), and O. E. Parratt (quantity surveyor).

The first question was whether the Brains Trust would consider that one of the best ways to obtain increased efficiency and productivity was to lift the wage rate in the building industry to a higher place in the national wages structure. MR. FARROW thought that the building industry would be very much better off if it could raise its status in relation to other industries. The status ought, however, to be raised in relation to output, which he considered "rather too low." MR. HOLLOWAY thought that the only way it could be done was with the aid of proper incentive schemes, and not by "just 4d. on the rate." MR. COLLIS thought that the differential between the craftsman and the labourer was now so small that there was not much incentive for a man to become a craftsman. He said that the status of the craftsman should be raised. MR. ANDERSON said in the USA men were more conscious of the importance of the job, and in the final result their much higher wage rates did not put up the cost of building all that much more. MR. PARRATT emphasised the need for a bigger differential between craftsman and labourer, and MR. KENNARD declared himself "no lover of the bonus system at all," which seemed to produce an inevitable tendency to skimp work.

The Building Regulations

The next question was, "Do the various building regulations unduly hinder freedom of design and often add unnecessarily to expense?" MR. KENNARD said that in certain cases regulations did increase expense, particularly the town planning regulations, but that the ordinary regulations, such as the by-laws, were necessary safeguards and that any builder of repute would carry out his work to these standards anyway. MR. ANDERSON said that of course the regulations increased costs, but the question really was were the regulations sensible. In the main he thought they were, and as such they made for good building. What he objected to was the differences between the by-laws in different areas, although he knew that steps were being taken to remedy this. MR. FARROW said that in factories the regulations undoubtedly increased costs, but they were entirely necessary. The trouble with the by-laws was that it seemed to take such a long time to get them revised. We had a first-class Building Research Station, but it took an unduly long time for the results of research to get down the line to local authorities.

To the question of whether, under modern conditions, the architect was doing his job, MR. COLLIS said "Yes, certainly." After all, architects were trained on new work and not on old. MR. HOLLOWAY thought that the architect failed principally in his approach to the commercial side of building. A knowledge of commercial management was what the architect needed most—he ought to know, for example, what it cost to forget to do something, particularly at the tender stage. MR. KENNARD had mixed feelings, but he thought that, with modern training, the architect needed a wider background—he lacked practical knowledge when he had completed his training. MR. PARRATT thought that the architect would benefit by spending one year in the workshop and one year in the management side of building. By this method the cost of building could be brought down.

MR. ANDERSON agreed with what had been said, but added that from the young architect's point of view there was only one thing that the architect did that no one else could do—design a building. All the other jobs could probably be done better by someone else. The whole approach was changed nowadays, and we had a completely functional architecture. He thought, however, that this demanded a higher standard of craftsmanship than ever before for its satisfactory execution—neo-classical ornaments could no longer be used to cover up gaps in the various components that made up a building; they must fit, or the result was deplorable. But the young architect, he said, could not, and should not, be expected to know all the details that went into buildings; the builder himself must play his part. MR. FARROW thought that "the common techniques of management" were lacking in the building industry generally, and were "surprisingly lacking" in the architect.

Qualifications for Entering Industry

Lively discussion followed the question —"Should entry into the industry as a master builder be controlled by some form of qualification?" MR. HOLLOWAY thought that the greatest qualification was that of hard experience. At the same time he acknowledged the great ideal that everyone who came into the industry should have had the appropriate training, but he thought that the door should be left open for those with "nothing but £100 and their own enthusiasm." MR. FARROW thought it a great pity that the trade unions did not pay greater attention to the abilities of the craftsmen they sent out; they should, in his opinion, guarantee that they were competent in their trade. So far as master builders were concerned, a lot of people thought that they had got to come up the hard way, but things were getting a great deal more complicated, and they had got to think less about craft training and concentrate more on higher management. MR. PARRATT said that in London most of the big contractors were business men, and most of their work went to sub-contractors; they needed a flair for business and finance more than a knowledge of building, and should be trained in management rather than in craftsmanship. MR. ANDERSON thought that the value of qualifications was to protect, to some extent, the public.

Is the Quantity Surveyor Necessary?

The next question stated that the Americans operated quite successfully without quantity surveyors, and did the Brains Trust consider them really necessary in this country? MR. FARROW said that the Americans did not take off quantities as we did, and he thought that the system was not wrong in this country; what was wrong was its abuse, by constant changes while the building was going up. MR. HOLLOWAY said it was not fair to blame quantity surveyors for the trouble with quantities to-day. If the quantity surveyor was given a decent chance to do his job the result was satisfactory—it was the abuse of the system that was wrong. MR. ANDERSON said the architect was thankful for the British system, and would be lost without it. Personally, he was all in favour of the quantity surveyor. MR. PARRATT said that as a quantity surveyor he always insisted that the drawings from which he took quantities were part of the contract. He was working for an American architect who thought the British system so good that he was going to try to introduce it into the USA.

Builders' Responsibility for Design

"Should a contractor be held responsible for an error in design causing collapse or leak or any other troubles, assuming an architect and/or engineer has been employed?" was the next question. MR. ANDERSON said he was not sure of the answer, but he believed that the contractor was in fact responsible for the stability of a building. MR. FARROW said the builder should be exonerated if it was the design that was at fault. MR. KENNARD thought that the responsibility would be according to the cause of the collapse—whether it was design or faulty workmanship, for example.

Whether contracts would proceed more smoothly and efficiently if all sub-contractors were selected and appointed by the main contractor was a question that brought the simple answer "Yes," from each member of the Trust.

The next question was whether delay could be reduced in issuing and honouring interim and final certificates. MR. PARRATT said he had not experienced any delay in issuing interim certificates. MR. ANDERSON said what mattered was to get the certificates honoured, and this depended on the building owner. He did not think that there need be a continuation of the "impossible delays" that had occurred with public building owners during the last few years. MR. HOLLOWAY said that the quantity surveying profession could not produce the final account within the appropriate time. Quantity surveyors had to get on with new work to keep their practices going, and it appeared to him that they could not find the time for final certificates. Delays were also caused by the fact that some builders did not know how to place their recoverable costs before the quantity surveyor, and if they could get over this difficulty they would eliminate one of the biggest causes of delay. MR. PARRATT agreed that much of the delay was due to the contractors themselves. In particular, he found that they would not look after their sub-contractors' recoverables.

"Is it not time bonusing ceased" was a question that received an answer in the negative from MR. FARROW. He said that bonusing in the building industry had not yet been studied sufficiently and was, in fact, still in its infancy, and they had got to learn a lot more about it.

Whether there was any justification for the "growing practice" of architect and quantity surveyor to make their own altera-

tions and amendments to the RIBA forms of contract was the next question. MR. HOLLOWAY thought that such action was sometimes justified, but that on the whole it was a great pity. The sooner the building industry could adopt one standard form of contract the better it would be. MR. ANDERSON expressed himself in favour of as little alteration as possible. Referring to the Joint Contracts Tribunal, he said that their findings were published in the Press, and were accepted as evidence in courts of law, and he did not see what more could be done to enforce their recommendations.

Another question stated that the building industry was being urged to mechanise, but asked if it was not probable that the industry's response was limited because it was cheaper to do certain jobs by hand. MR. KENNARD said he was amazed to think how little progress had been made in mechanisation, as he was sure that ultimately this was one way of reducing costs. MR. HOLLOWAY said that in America the craftsman delighted in using mechanical aids, whereas in this country their introduction met with considerable opposition. The difficulty of getting the unions to come along with them in this matter was the biggest stumbling block in regard to the greater use of mechanical hand tools.

"What reason, or reasons, are responsible for the present alleged high cost of building?" was the last question reached. MR. COLLIS questioned whether the cost was as high as people alleged, and MR. HOLLOWAY concurred with this view. MR. FARROW said that if one compared, for example, the present day cost of a small car with a house, the cost of building did not appear to be so high as some people thought. MR. ANDERSON referred to the cost of building graph published in *The Builder* of May 7. From this he said it appeared that the gap between wages costs and materials costs and total building costs was increasing, and this suggested that some economies might be possible in the sphere of management. MR. PARRATT advanced three reasons for the high costs of building: shortage of materials; lack of information; and the fact that productivity per man was lower than it used to be.

MR. LESLIE then thanked the team for their straightforward answers to the questions posed them, and MR. L. J. BRADSHAW, vice-chairman of the Area, proposed a vote of thanks to the Question Master and the Brains Trust.

BUILDING PLANT DISPLAY

Craft Competitions Arranged

SOME 60 exhibitors will be showing the latest machines, equipment and powered tools available to the building industry, at this year's "Building Plant Exhibition," organised by the Ministry of Works.

The exhibition, which is to be held at Reading, will be opened on June 24, by Mr. J. R. Bevins, Parliamentary Secretary, Ministry of Works.

Competitions will be held in bricklaying, plastering and masonry for teams from technical colleges and employers in the Southern Region. Prizes have been given by BATC and the Southern Federations of Building Trades Employers and Operatives, and will be presented by Sir Frederick Leggett, KBE, CB, chairman of BATC on the final day of the exhibition.

The exhibition remains open until June 30, daily (except Sunday), 10.30 a.m. to 7.30 p.m.

BRICK SUPPLIES

Production Not Yet Equal to All Demands

By N. G. BREEZE

RELIABLE estimates point to the fact that the production of clay building bricks will be in the region of 7,500m. this year. Thus production continues to rise—the figure last year was a little short of the 7,200m. mark. Yet there must be many to-day who greet the news of a continued increase in production with a measure of scepticism. It is not suggested that in so doing they belittle the efforts of those engaged in the brick manufacturing industry. Rather is this feeling the outcome of frustration at shortages or the slow rate at which supplies are becoming available, aggravated in some instances by a lack of knowledge concerning the position.

Despite continual expansion it would seem that a period of shortage of supply must continue to be felt for some time, particularly in regard to local shortages, due largely to the fact that it is uneconomic to transport large quantities of bricks from one area to another.

The advent of better weather always heralds great activity in the building world, and if provision has not been made for bricks well in advance of site work, disappointment and delay may again result. Fortunately, the lessons of the last few months have been noted and in many cases supplies arrive in the form of a continual flow, thanks to a system of advance ordering. This is not always possible, and it is then that delay may occur. Further, it should not be forgotten that although brick supplies are continually increasing, the volume of work is likewise growing. There are over 1,000 brickworks in operation in this country to-day, yet there is a sharp division in so far as total production is concerned. Roughly 40 per cent. of the total yearly output comes from five big producers. The remaining production comes from works of all sizes, contributing bricks of all types. In many cases the bulk of their production may still be of a seasonal nature, and it is unfortunate that the period of scarcity of supplies from these seasonal yards coincides with the better building weather and consequent heavier demand. Thus, some areas may find periods when the shortage is more acute than at others.

As previously pointed out, alleviation in the form of bricks from other areas is not always possible owing to the weight and consequent freight charges. This is not to say that bricks are not often transported considerable distances and in considerable quantities. They are. The point at issue is the utilisation of substitute bricks at prices comparable with those produced locally.

Few Stocks at Works

Despite the winter, few or no stocks were stored at brickworks in readiness for the "spring offensive." Customers wisely decided to take in supplies and stock-pile, and thus any attempt to build-up stocks at the works was impossible. Much of this is perhaps common knowledge, but there are still many people to-day who are inclined to think that the manufacturer or supplier is not always doing all he should in their particular case. The increasing production speaks for itself. As the National Federation of Clay Industries' journal, *The Brick Bulletin*, pointed out in a recent issue: "The important factor in ensuring a steady and adequate supply of bricks is a steady demand, which implies a consistent and organised building policy. Large quantities of bricks cannot be stored away in readiness to meet some hypothetical future need, nor can production be switched on or off at will to meet sudden changes in the building programme. It must not be forgotten that brickmaking, like other basic industries such as agriculture and mining, is a long-term business, involving a series of integrated operations. Apart from the time necessary to extend buildings and to procure and instal new plant, the actual time required for production, from the excavation of raw material to removal of bricks from the kiln, may be as much as six weeks."

It would seem that the brickmaking industry has geared itself up to a high level of production, a level, however, that may still have to be exceeded, before supplies equal demand.

CRICKET

National Federation v Vitruvians

THE annual match between the National Federation of Building Trades Employers and the Vitruvians (the architectural and technical Press) is set for Friday, June 4, at the Richmond Cricket Club, Surrey, beginning at 11.30 a.m. The first ball will be bowled by Mr. George W. Grosvenor, President of the National Federation, who are this year's hosts. Teams:—

VITRUVIANS: R. Dowson (*Architect and Building News*), R. Mudie (*Architects' Journal*), A. Watts (*Illustrated Carpenter and Builder*), W. A. K. Faldo (*Official Architecture and Planning*), I. M. Leslie (captain) (*The Builder*), Roger Norton, J. Kennedy Hawkes, A. Boyd, D. Boswell, E. Chamberlain and and A. N. Other.

NATIONAL FEDERATION: J. A. Bird (captain) (Liverpool), V. R. Blake (Eastern), W. D. Bryant (National Federation), R. E. Costain (Liverpool), B. J. Garrett (London), B. W. Gregory (Southern), C. F. Kidman (Eastern), P. H. P. Lovell (Southern), F. Morton (Southern), H. J. Munnion (Southern) and R. W. Triggs (London).

LMBA draw with RICS

THIS MATCH was played at Chiswick on May 6. The LMBA won the toss and batted first. The opening batsmen made a good start with 45 runs, and A. F. Wallis and R. W. Triggs took the score to 71. After something of a slump, the last two batsmen, B. J. Garrett and J. Marshall Andrew, put on 31 for the last wicket and the score was 148. For the RICS, Gray took four for 54 and Thurlow five for 35.

The RICS were left two hours in which to get the runs. The first three wickets took the score to 68, and the next four to 99. When the last over was called the RICS needed 12 runs to win and the LMBA one wicket. Neither team succeeded, and the match was drawn. Deagle, 55, and Hawkes, 27 not out, were top scorers for the RICS. For the LMBA, Garrett took three wickets for 57 and Marshall Andrew five for 43.

BOOKS RECEIVED

SCULPTURE IN WOOD. By P. Edward Norman. (London: The Studio, Ltd.) Price 15s.

QUALITY BUDGET HOUSES. By Katherine Morrow Ford and Thomas H. Creighton. (London: Chapman and Hall.) Price 40s.

THE STEEL SKELETON, Vol 1. By Prof. J. F. Baker. (London: Cambridge University Press.) Price 42s.

THE ARCHITECT AND THE LAW. By Richard Body. (The Institute of Registered Architects.) Price 8s. 9d. post free.

PRICED SCHEDULES. 1954. (London: Thos. V. Hutchins.) Price 70s.

IN PARLIAMENT

Repairs and Rents Bills

ON May 18, in the House of Lords, the Housing Repairs and Rents Bill was considered in Committee.

On Clause 1 (Proposals for exercise of functions of local authorities as to clearance areas, etc.), LORD SILKIN said that the Clause gave the Minister the power to require local authorities to make a survey and submit to him proposals for dealing with slums. The Minister could do that equally well under Section 5 of the 1936 Act, and the Clause was not really necessary. Having said that, he asked the Government what were their intentions with regard to slum clearance. The Opposition had accepted the principle of patching up, but he would be glad to be told if it was intended to go out on a big slum clearance campaign. If the powers of patching-up contained in the Bill were residual powers, and if there was really going to be a serious campaign for the next five years to get rid of the slums, then they would all be behind the Government. But it was difficult to make up one's mind what was really the policy of the Government. Judging from the White Paper, it seemed that they felt they must go on building houses, and encouraging private enterprise to build houses for sale, but that slum clearance would be carried out *pari passu* with the provision of more houses. He believed that to be a mistake. He felt that the time had now come, having regard to the number of houses that were being built, and to the large pool of local authority housing which they now possessed, and which was increasing, to make a determined effort to get rid of the slums, and to give that problem the highest priority.

THE LORD CHANCELLOR said it was the purpose of the Government to make a determined assault on the slums, and by every means in their power to effect clearance of these slums wherever they existed, and to provide decent houses. That was why they gave emphasis to slum clearance in Clause 1, and reminded local authorities of what they might have forgotten. For 15 years almost nothing had been done, and it was now desirable to give the slum clearance scheme priority. The Government did not desire to patch in order to defer demolition, but merely to patch so long as demolition was not a realistic possibility. Demolition of slums came first.

The Clause was ordered to stand part of the Bill.

Temporary Accommodation

On Clause 2 (Power of local authorities to retain for temporary accommodation certain houses in clearance areas), LORD WILMOT moved an amendment to set a term of 10 years to the period under which these slums could still remain standing. That, surely, he said, was long enough to enable the authority to catch up with the arrears and to get on with what was their most urgent task—the replacement of the slums by new and habitable dwellings.

THE LORD CHANCELLOR asked what was the use of setting a time limit, be it five or ten years, when they knew that there were great cities which, according to the best advice and information they could get, would not, within a period of ten years, be able to solve their problem? The Minister thought there should be no time limit in the Bill. The problem would be solved by the co-operation between the Minister and the local authorities.

The amendment was negatived by 53 votes to 24.

Fitness for Habitation

On Clause 9 (Standard of fitness for human habitation), LORD SILKIN moved an amendment to substitute for the standard of fitness contained in the *clause, the standard laid down by the Mitchell Committee.

THE LORD CHANCELLOR said there was a vital paragraph in the Mitchell report which recognised the impossibility of applying this standard wholesale, except at some time in the future when the housing condition of the country permitted. They were not laying down in the Clause a standard of what was unfit for human habitation; they were laying down a standard for the purposes of the principal Act; and the result of declaring a house unfit for human habitation was at once to impose certain duties upon the local authority. It was quite clear that it would be absolutely unrealistic to impose on a local authority, here and now, the duty of proceeding on their necessary acts under the Act of 1936 in the case of every house which did not now conform to the standard laid down in the amendment. The application of that definition was quite out of the question and would impose a wholly impossible burden on the local authorities.

The amendment was negatived by 70 votes to 20.

New Clause Added

THE LORD CHANCELLOR moved a new Clause which, he said, was designed to fill a gap in the powers of local authorities in dealing with overcrowding which would result from the repeal by Clause II of the by-law-making power.

The new Clause was read a second time and added to the Bill.

When Clause 22 had been considered the further consideration of the Bill was adjourned until May 25.

The Scottish Bill

IN the House of Commons on May 17, the Housing (Repairs and Rents) (Scotland) Bill was considered in Committee.

On Clause 2 (Power of local authorities to retain for temporary occupation certain houses in clearance areas), Commander GALBRAITH, Under Secretary, Scottish Office, moved an amendment making it obligatory, instead of permissive, on local authorities to carry out patching work required on houses in clearance areas retained for use pending their demolition.

The amendment was agreed to.

COMMANDER GALBRAITH moved a further amendment to ensure that when the demolition of houses in clearance areas was postponed the local authority should carry out such patching works as might in the opinion of the authority be required from time to time.

The amendment was agreed to.

On Clause 5 (Local Authorities' Contributions), MR. JAMES STUART, the Secretary of State for Scotland, moved an amendment to make it possible for the Secretary of State to vary the ratio of payments to local authorities, at present equal, by order, subject to affirmative resolution, instead of by legislation. He said that the Government accepted that that was a simplification of procedure likely to appeal to all.

The amendment was agreed to and the Committee stage was concluded.

* This is reproduced on page 944.—Ed.

The Planning Bill

Good Progress Reported

STANDING Committee C of the House of Commons are making good progress with the Town and Country Planning Bill. On May 18 they concluded consideration of Clauses 20, 21 and 22, and on May 20 they dealt with Clause 23 (Compensation excluded in certain cases). On the latter clause MR. MACMILLAN, the Minister of Housing and Local Government, moved an amendment to insert words to prevent compensation from being payable in respect of decisions under the Control of Advertisement Regulations, which were made under Section 31 of the 1947 Act. A decision on an application for consent to display advertisements would, therefore, be technically a planning decision, as that term was defined in Clause 17(3). Under the 1947 Act the use of land for the display of advertisements was exempted from development charge. People did not have to pay a development charge if they were allowed to use the land for that purpose, and no provision was made for compensation where consent was refused. The abolition of the development had, therefore, not made any difference in the field and the Government did not propose to make any provision for compensation. Powers for control under the Act could only be exercised either for amenity on the one hand or public safety on the other. If a refusal of consent was justified on those grounds, they did not regard it as a proper subject for compensation.

MR. MACCOLL said the amendment was a great step forward and would make life much easier for those who were trying to cope with the dreadful problem of advertisements.

MR. LINDGREN, who also thanked the Minister, spoke of the good work done by the Ministry and the advertisers in materially raising the standard of advertisements. Many shown in the towns, he said, were now no longer the horrid, disfiguring monstrosities that they were, but useful amenities.

The amendment was agreed.

OTHER BUSINESS

London Bombed Sites

On May 18, SIR ALFRED BOSSOM asked the Minister of Housing and Local Government if he would, before allowing more agricultural land to be taken for housing Londoners, consider taking steps to require the sites of bombed houses in the London area to be used for this purpose.

MR. MACMILLAN said that the housing authorities in the County of London were building at the rate of 11,000 dwellings a year within the county and were already making maximum use of suitable war-damaged sites. The urgent housing needs of London could not be met without some further provision outside the county, but it was his endeavour, in consultation with the Minister of Agriculture and Fisheries, to see that as little harm as possible was done to agriculture in that process.

Houses for Ex-Soldiers

On May 18, MR. JOHN HALL asked the Minister of Housing and Local Government what further approach he had made to local authorities to give special consideration to housing applications submitted by regular soldiers who would be required to vacate service accommodation at the end of their military service.

MR. MARPLES, who replied, said that the housing management sub-committee of the

Central Housing Advisory Committee was reviewing among other matters the whole question of residential qualifications required by certain local authorities, including the difficulties of regular servicemen.

Cost of Official Buildings Abroad

On May 18, MR. JAY asked the Minister of Works why it was necessary to spend £557,000 on the provision of a new compound for the Political Resident and his staff in Bahrein during the present financial year.

MR. BEVINS, the Parliamentary Secretary, said that in 1946 the decision was taken to move the headquarters of the Political Resident in the Persian Gulf from the Persian side of the Gulf to Bahrein Island on the Arabian side. This had meant building a compound because no suitable permanent accommodation was available. The total cost was estimated at £557,000 spread over several years.

MR. JAY asked why it was necessary to spend £1,500,000 on residential and office accommodation for the High Commissioner in New Delhi in the present financial year.

MR. BEVINS said that the figure of £1,500,000 was a provisional total estimate of the cost of building offices and residential accommodation for the High Commissioner and his Staff in New Delhi. It was not the amount to be spent this year.

Pictures at Lancaster House

On May 18, MR. GRIMOND asked the Minister of Works if he would make arrangements for Lancaster House to be used as an additional gallery, at suitable times, for the National Gallery and the Tate Gallery.

MR. BEVINS said that the Minister was discussing the possibilities with the Trustees of the National Gallery.

The Bank Rate and Public Loans

In the House of Commons on May 18, MR. WOODBURN, in a question to the Chancellor of the Exchequer on the reduction of the bank rate from 3½ to 3 per cent., said that local authorities were anxious to know whether the reduction would be reflected in a reduction in the rate of the Public Works Loans Board.

MR. BUTLER replied that those loans were not governed by the bank rate but were based on the general level of Government credit from time to time for loans for comparable periods. He would keep a close watch on this.

Dartford-Purfleet Tunnel

On May 19 MR. DODDS asked the Minister of Transport and Civil Aviation if he would now state on what date work would recommence on the Dartford-Purfleet Tunnel.

MR. LENNOX-BOYD said it was proposed to recommence work on this tunnel next year. He could not at present be more precise than that as to dates.

Building Societies' Interest Rates

On May 21, MR. FLETCHER-COOKE asked the Minister of Housing and Local Government what conversations he had had with the building societies about the possibility of lowering the rate of interest on mortgages as a result of the reduction in the Bank rate.

MR. MACMILLAN said it was a little early to discuss the question of the long-term rates of interest.

Manchester Building Exhibition

The Building Trades Exhibition will be held at the City Hall, Manchester, from October 19 to 30 next.

THE SUPPLY OF ELECTRIC WIRES AND CABLES

Monopolies Commission's Report

THE following summary of the report of the Monopolies Commission on the Supply of Electric Wires and Cables was given by MR. DUNCAN SANDYS, Minister of Supply, in the House of Commons, on May 17, in reply to a question by Mr. Swingler. Mr. Sandys said:—

In their report on the Supply of Insulated Electric Wires and Cables the Monopolies Commission summarised their conclusions as follows:—

1.—The restriction of members' freedom which is involved in their having to submit new designs and types to their associations for approval is a necessary concomitant of the minimum standards of quality established by the associations and has been reasonably administered.

2 (a).—A system of purchasing mains and super-tension cable which is in the long-term interests both of the consumer and of the producer will have to be worked out by the British Electricity Authority with the industry.

2 (b).—The present arrangement for the Cable Makers' Association (CMA) members' costs to be investigated by independent accountants is in the public interest, and so long as CMA members act together as sellers of these types of cable there should be an obligation upon them, in the ranges in which no competition exists, to submit their costs to the British Electricity Authority in order to establish that the prices charged are reasonable.

2 (c).—Prices to buyers other than the British Electricity Authority should bear a direct relationship to the prices charged to the British Electricity Authority, and this relationship should be reasonable.

2 (d).—This relationship should be made known.

3.—The system of common prices for rubber cable and the Covered Conductors' Association's (CCA) system of common prices for covered conductors should be brought to an end.

4.—As a defence against extreme price-cutting the CMA and CCA should be allowed to fix minimum prices, giving no more than a reasonable profit to the lowest cost producer of each type of cable; if minimum prices are established on this basis, costs and profits should be reviewed by the appropriate Government department from time to time to ensure that the prices are fixed in accordance with the conditions which we have recommended.

5 (a).—So long as there is no independent competition in submarine telegraph cable the periodical cost investigations which are now made are clearly desirable.

5 (b).—Submarine telegraph cable is outside the international agreement, and it is important that it should remain so.

6 (a).—We suggest that the General Post Office should leave itself free in future to place a proportion of orders for land telephone cable with independent concerns and should take appropriate steps to ensure the protection of the public interest for all its purchases of telephone cable outside the bulk orders.

6 (b).—Price agreements for sales of telephone cable to purchasers other than the General Post Office should be brought to an end.

7.—If further bulk orders are placed, their existence should be publicly announced and provision should be made to safeguard the continuance and development of efficient independent competition.

8.—The quota systems of the CCA and of the affiliated associations of the CMA should be brought to an end.

9.—The system of allocations operated by CMA members and others should be brought to an end in all cases in which it still obtains.

10.—The covenant entered into by British Ropes, Ltd., in which they undertake not to make cables, should be allowed to lapse.

11.—We welcome the co-operation of the CMA and CCA on the questions of quality clauses in BSI specifications, and we recommend that clauses governing the quality of the insulating materials (together with any warning addendum that may be thought appropriate) should be included in all BSI cable specifications.

12.—The CMA and CCA policy on patents has been liberal and we have no recommendation to make.

13.—When the present arrangements for regulating copper supplies are brought to an end the Government should continue to keep a watch on the position to ensure that supplies are fairly allocated or that competitive supplies are available either within the United Kingdom or by import.

14.—We make no recommendations as regards import restrictions, because they form part of a complex whole including provisions affecting the export trade which are outside our terms of reference.

15.—The exclusive dealing provisions in agreements with wholesalers and other buyers of rubber cable should be brought to an end.

16 (a).—The aggregated quantity rebates payable in connection with rubber cable should cease.

16 (b).—Association rebates payable in connection with rubber cable should cease.

16 (c).—The rebate paid to the National Electrical Contractors' Association on purchases by its members of mains cables should cease.

17 (a).—The CCA aggregated quantity rebates should be brought to an end.

17 (b).—Their agreements with buyers who undertake not to make covered conductors should be brought to an end.

Government's Views

After a thorough examination of the complicated issues involved, Mr. Sandys' statement continued, the Government have asked the trade associations concerned to give an assurance that they will bring their arrangements into conformity with these conclusions, with the exception of numbers 2 (d) and 6 (b), not later than December 31 next.

The Government do not feel able to endorse conclusion 2 (d), since it would be contrary to well-established commercial and Government practice for the price negotiated in contracts to be made public. They have, however, asked the associations for an assurance that they will furnish the Government from time to time with information about the relationship between the prices charged to the British Electricity Authority and those charged to other buyers.

With regard to conclusion 6 (b), the Government consider that the interest of general

users of telephone cable can best be safeguarded by ensuring that the prices charged to them bear a reasonable relationship to those paid by the General Post Office, which are settled after cost investigation. The Government have therefore asked the associations for an assurance that they will apply this principle and will furnish the Government from time to time with information about this relationship.

The Postmaster-General will take action to give effect to conclusions 6 and 7, relating to purchases of telephone cable by the General Post Office.

The attention of the British Electricity Authority has been drawn to conclusions 2 and 7.

If the trade associations concerned are prepared to give the assurances asked for, it will not be necessary to make an order under Section 10 of the Monopolies Act.

INQUIRY BUREAU

Legal Position of Surveyor

Q.—What is the strictly legal position of a quantity surveyor appointed under the terms of the CCC/Wks./1 Standard Forms of Contract for Building and Civil Engineering Work as used by Government departments?

Does the surveyor occupy a quasi-judicial position in which he must preserve impartiality, or is it his duty primarily to represent and defend the interests of the department which has appointed him? M. J. W.

A.—A legal correspondent writes: I do not consider that there is anything in CCC/Wks./1 to vary the position which a quantity surveyor normally occupies in relation to the parties to a building contract.

Although there appears to be little authority on the point, I am of opinion that the quantity surveyor is in the same position as the architect: that is to say, during the progress of the contract, he is the servant or agent of the employer, but that when it comes to the final certificate he must act in a quasi-judicial capacity and act impartially towards the employer and the contractor. The leading case on the quasi-judicial functions of the architect in connection with final certificates is *Chambers v. Goldthorpe* (1901) K.B. 624, and I think this case would be equally applicable to the quantity surveyor.

A. E. T.

Damage by Tree Roots

Q.—I am endeavouring to persuade the local authority to fell a number of Lombardy poplars which are about 60 to 70 ft. high, and which are in the public highway near my house, the nearest being only about 25 ft. away. In the late summer, unless I go to the considerable trouble of keeping the ground soaked with a continuously running hose, extensive cracks open up in various places, and despite the use of the hose some minor damage occurs.

To strengthen my case I am desirous of quoting cases where the courts have awarded damages against the owners of poplar trees on account of damage caused by them. The only case I know of is *Davis v. Artizans Estates, Ltd.*, in May, 1953, when Davis was awarded £1,325 damages. I was wondering whether you have a record of similar cases or could advise me where I might obtain such information. K. B. M.

A.—There is very little case law on the subject of damage by roots, the earliest English authority being *Butler* v. *Standard Telephones and Cables, Ltd.* [1940]. This case is reported in 1940 All England Law Reports, Vol. 1, at page 121, and in 1940 King's Bench Reports, Vol. 1, at page 399. In this case—as in *Davis* v. *Artizans Estates, Ltd.*—poplar trees were growing on private property, and as a result of the roots intruding on neighbouring land, damage was done to the neighbouring property.

It is not clear whether the roots in this case have actually grown into the owner's land. Even if they have not, he can still maintain an action for nuisance, but it is as well to recognise that the established authorities refer to cases where the roots actually grew into the adjoining land.

It is also to be noted that in both these cases the trees were growing on private property. In the present case the trees have been planted in the highway, and this raises the question of the powers under which the local authority have planted them. It is probable that the authority have planted them under Section 43 of the Public Health Acts Amendment Act, 1890, which reads:

> "Any urban authority may if it sees fit cause trees to be planted in any highway repairable by the inhabitants at large within their district . . . provided that this power shall not be exercised nor any trees so planted be continued so as to hinder the reasonable use of the highway by the public or by any person entitled to use the same or so as to become a nuisance or injurious to any adjacent owner or occupier."

This section clearly imposes liability on the local authority, but it will be necessary to find out whether in fact the authority are using Section 43 of the 1890 Act. It is just possible that the authority have the benefit of some power which would free them from liability for damage of this sort.

A. E. T.

Waterproofing Compounds

Q.—My present house has a cement-rendered loggia, which is not only porous but has many cracks which extend through to the distempered interior. Would you recommend a waterproof dressing, either colourless or with the colour of matured cement rendering? The property is not my own, so I am not proposing to re-render.

C. O. R.

A.—While there are many preparations on the market that are claimed by the manufacturers to render porous surfaces waterproof, it is certain that not one of them would suggest their preparation would seal cracks of the nature indicated in the walls of this loggia. There are a number of firms who advertise waterproofing compounds that under normal conditions would provide a seal to surface cracks, though again, such treatment cannot be considered permanent and would require repeated treatment at intervals of two to five years according to the nature of exposure.

Though the inquirer has indicated reluctance to re-render, it is felt that this is the only real hope of providing anything like a satisfactory solution to the problem. Even when offering this as a solution, some consideration should be given to the wall itself, since any wall which has cracks throughout its thickness should be given some attention before applying any form of rendering. The purpose of the rendering is either as a decorative finish or protection against the elements, and not to hold an inferior weak wall together. (The name and address of a supplier of a proprietary waterproofer has been supplied to the inquirer.)

H. O. D.

PAINTING CRAFT EXAMINATIONS

Unification of Schemes

FOR some years, education for the painting craft has been complicated by the existence of two separate series of examinations at national level using similar syllabuses. These examinations have been those of the City and Guilds of London Institute and of the National Painters' and Decorators' Joint Education Committee of England and Wales. The resultant duplication has been a source of confusion and difficulty to teaching staffs and students, and of concern both to education authorities and the industry.

Important steps towards the unification of their schemes of examination have now been announced by the City and Guilds of London Institute and the National Painters' and Decorators' Joint Education Committee of England and Wales (the NJEC). As soon as possible after the examinations of 1954, the two schemes of examination will be replaced by a single scheme conducted under the auspices of a new committee and administered through the machinery of the "City and Guilds," though the NJEC will have special responsibility in connection with the machinery for adjudication of practical work. The new committee will be known as "The Advisory Committee of the City and Guilds of London Institute in conjunction with the National Painters' and Decorators' Joint Education Committee of England and Wales," and it will include nominees from all bodies represented on the existing "City and Guilds" Advisory Committee, but there will be increased representation of the "NJEC" and, for the first time, representation will be invited from the National Joint Apprenticeship Board for the Building Industry and the National Federation of Building Trades' Employers.

The Committee's First Task

The first task of the new Advisory Committee will be to review and revise the present "City and Guilds" scheme and syllabuses, and in undertaking this review the interim report of the Syllabus Sub-Committee set up by the present "City and Guilds" Advisory Committee will be taken into account. It is hoped, moreover, that the closer integration of the industrial and educational interests which the new arrangements permit will not only give a new impetus to the development of painting craft education, but also stimulate progress in solving the special and difficult problems which have been encountered in making comprehensive and satisfactory educational provision for this craft.

In view of these developments, the National Painters' and Decorators' Joint Education Committee of England and Wales have decided to discontinue the examinations which they have conducted for over fifty years. The NJEC preliminary examination will not be held after 1954, and the intermediate and final examinations will only be available in 1955 to students requiring to complete their qualification for the NJEC certificate of craftsmanship.

PERSONAL COLUMN

MR. W. H. MCFADZEAN, CA, deputy chairman and chief executive of British Insulated Callender's Cables, Ltd., will become the chairman of the company on the retirement of SIR ALEXANDER ROGER, KCIE, immediately after the annual general meeting on June 10. Mr. McFadzean will continue to act also as chief executive of the company.

The Builder

CURRENT PRICES OF MATERIALS

THE information given on these pages has been specially compiled for *The Builder* and is copyright. It is the intention that the details given should indicate fair average prices of materials not necessarily the highest or the lowest. The prices apply to large quantities of materials loaded at works, delivered at London Stations or at site in London Area as stated. Prices for smaller quantities ex merchant's warehouse will necessarily be higher so as to include the stocking and handling costs involved. Due to the exceptional circumstances now prevailing it is recommended that the prices of materials should be confirmed by inquiry from suppliers and merchants.

AGGREGATES AND SAND

Delivered site in full lorry loads. Average of prices for Boroughs of Westminster, Paddington, Holborn and St. Pancras.

		£	s.	d.
Pit Ballast	per yd.	1	1	5
Pit Sand	,,	1	0	5
Washed Sand	,,	1	2	3
¾ in. Shingle	,,		18	11
¾ in. Broken Brick	,,		19	3
Pan Breeze	,,		9	6
Fine or Coarse Foamed Slag Aggregate	per ton	2	18	1
2 yds. of fine and 2.6 yds. of coarse per ton				

CEMENT, etc.

Including non-returnable jute sacks or paper bags.

		£	s.	d.
Best British Portland Cement. Standard Specification delivered Charing Cross area.				
6-ton loads and upwards, site	,,	4	16	6
1 to 6 tons, site	,,	5	5	6
Ferrocrete Rapid Hardening Cement in 6-ton loads and upwards to site	,,	5	4	6
1 to 6 ton do. site	,,	5	13	6
Aquacrete Water Repellent Cement. 32s. 6d. per ton on ordinary cement prices.				
Red, Buff or Khaki Colorcrete in 6-ton lots ... Other colours according to colour.	,,	6	18	0
In 4-ton lots from 211s. 9d. to 435s. 9d. per ton.				
White Portland Cement	,,	12	17	0
Under 1 ton	per cwt.		15	4
417 Cement (Ultra Rapid Hardening) in 6-ton lots and upwards	per ton	6	9	0
Super Cement (Waterproof), 32s. 6d. per ton above Portland Cement.				
Cullamix Tyrolean Finish, £9 4s. 3d. to £10 17s. 9d. (1-ton loads and upwards).				
Lightning and Ciment Fondu Brands High Aluminous cement, 6-ton lots and up	,,	14	0	9
Stourbridge Fireclay, 6-ton loads at Railway Depot, London	,,	5	18	3

BRICKS

Full Loads.

		£	s.	d.
First Hard Stocks	per 1,000	11	0	6
Second Hard Stocks	,,	10	4	6
Mild Stocks	,,	8	13	6
All loaded free into lorry at the works. The question of haulage is still very difficult and prices must be obtained from job to job.				
2½ in. Nominal Fletton Bricks to sites in W.C. District Commons	,,	5	13	0
Cellular do.	,,	5	13	0
Keyed do.	,,	5	15	0
Rustics	,,	6	18	0
Cellular Rustics	,,	6	18	0
Single Bullnose do.	,,	6	13	0
Sandfaced	,,	7	13	0
Best Blue Pressed Staffs (London Stations) ...	,,	24	14	6
Do. Bullnose (London Stations)	,,	25	8	6
Blue Wire Cuts (London Stations)	,,	22	7	6
Midhurst Lime Bricks (London Sites)	,,	9	18	0
Uxbridge Whites (London Sites)	,,	9	1	6
2½ in. Best Stourbridge Fire Bricks (London Stations)	,,	22	12	6
3 in. do. (London Stations)	,,	27	3	3
2½ in. Machine-made Sandfaced Red Facings (London Sites)	,,	13	12	0
2½ in. Machine-made Multi Red Facings (London Sites)	,,	13	17	0
2½ in. Hand-made Sandfaced Red Facings (London Sites)	,,	14	7	0
2½ in. Hand-made Sandfaced Multi-Colour Facings (London Sites)	,,	14	7	0
2½ in. Surrey Clamp Burnt Multi Stock Facings (London Sites)	,,	13	2	0
2½ in. Surrey Kiln Burnt Multi Stock Facings (London Sites)	per 1,000	14	0	6
Glazed Bricks (London sites), White, Ivory, Brown—				
Stretchers	,,	64	0	0
Headers	,,	63	0	0
Quoins, Bullnose and 4½ in. Flats	,,	80	0	0
Double Stretchers	,,	85	0	0
Double Headers	,,	77	10	0
One side and two ends	,,	87	0	0
Two sides and one end	,,	89	10	0
Splays and Squints	,,	83	0	0
Second quality — 10% Bests. Cream and Buff £3 extra over White. Other colours, hard glaze, £8 10s. 0d. extra over White.				

PARTITION SLABS, etc.

Delivered Central London Area.

HOLLOW CLAY PARTITION BLOCKS (Keyed)

	Minimum lorry loads.		£	s.	d.
2 in.	140 yds.	per yd. sup.		4	3
2½ in.	140 yds.	,,		4	6
3 in.	120 yds.	,,		5	0
4 in. (6 cavity) ...	95 yds.	,,		6	7
Half blocks at no extra charge.					

CLINKER CONCRETE.

			£	s.	d.
2 in.	100 yds.	,,		3	7
2½ in.	85 yds.	,,		4	2
3 in.	75 yds.	,,		5	0
4 in.	55 yds.	,,		6	2

CRANHAM

		£	s.	d.
2 in.	,,		6	5
2½ in.	,,		7	1
3 in.	,,		8	3
4 in.	,,		10	2
4½ in. Load bearing quality	,,		11	2

FLOOR BLOCKS

		£	s.	d.
3 in. Floor Blocks 12 in. by 12 in. delivered in full lorry-loads	per 1,000	31	10	0
4 in. do.	,,	34	13	0
5 in. do.	,,	39	7	0
6 in. do.	,,	46	16	0
7 in. do.	,,	54	1	0
8 in. do.	,,	61	15	0

STONEWARE DRAIN PIPES, etc.

The following are the percentages to be added to the Standard List prices delivered London Area.

	Over 2 tons	Over 100 Pieces under 2 tons	Under 100 Pieces under 2 tons
Best Quality	+67½%	+97½%	+107½%
B.S.S. Best do.	+10% +67½%	+10% +97½%	+10% +107½%
Tested Quality	+37½% +67½%	+37½% +97½%	+37½% +107½%
B.S.S. Tested do.	+47½% +67½%	+47½% +97½%	+47½% +107½%

		£	s.	d.
3 in. Land Drain Pipes (in 12 in. lengths)	per 1,000	10	8	6
4 in. do.	,,	13	14	6

STONE

		£	s.	d.
Bath Stone—				
Monks Park...	per ft. cube		6	10
St. Aldheim Box Ground	,,		7	10
Delivered in railway trucks at South Lambeth B.R. Western Region				
Doulting Stone Random Blocks. Delivered London area	,,		7	7
Beer Stone. Delivered London area	,,		7	3
Portland Stone—				
Brown Whitbed in random blocks, 20 ft. average delivered in railway trucks at Nine Elms, B.R. Southern Region	,,		7	7½
Hopton-Wood Stone—				
F.O.R. Quarries, Wirksworth, Derbyshire—				
¾ in. Slabs for wall lining, sawn two sides in random sizes up to 5 ft. and not over 15 ft. super in area	per ft. sup.		6	2
1¼ in. Slabs for paving, sawn two sides as above described	,,		8	6
Yorkshire Stone—Blue Robin Hood Quality. Delivered to site London in 6-ton lots.				
9 in. × 3 in. Rubbed, weathered, throated and stooled cills	per ft. cube	3	1	9
12 in. × 6 in. do. do.	,,	2	4	3
12 in. × 3 in. Plain coping, twice throated ...	,,	1	14	0
12 in. × 3 in. Weathered and twice throated coping	,,	2	5	6
14 in. × 6 in. do. do.	,,	2	1	0
4½ in. × 9 in. Plinth, rubbed on top and face ...	,,	1	16	9
3 in. sawn two sides Slabs, random sizes ...	per ft. sup.		6	6

STONE—*continued*

		£ s. d.
Templates and Cover Stones, 3 in., 4 in. and 6 in. thick, edges coped for rendered brickwork ...	per ft. cube	1 2 6
Do. do. fair one edge for fair faced brickwork		1 6 9
Hard York—		
12 in. × 2 in. Square Steps, rubbed on top and edge	per ft. run	7 10
14 in. × 3 in. Round-nosed Steps, rubbed on top and front	per ft. cube	2 2 0
12 in. × 6 in. Plain Steps, rubbed top and front ...	„	1 16 9
2 in. Rubbed and Jointed Paving, given sizes ...	per ft. sup.	7 6
2 in. Sawn Paving, edges squared, in random sizes	per yd. sup.	2 11 9

TILES and PANTILES

Delivered London area by road in 6 tons or over per 1,000

		£ s. d.
Machine-made Pantiles and French pattern Tiles from Lincolnshire district		28 18 6
Hand-made Pantiles Berkshire district		41 18 6
Hand-made Double Roman Bridgwater district ...		56 17 6
Hand-made 10½ × 6½ tiles Berkshire district ...		12 17 0
Machine-made 10½ × 6½ Staffordshire district		13 5 0
Hand-made Hip and Valley tiles per doz.		1 8 6
Machine-made Hip and Valley tiles do.		1 6 3
Concrete tiles 10½ × 6½		6 18 6
do. Interlocking (49S)		18 9 6

NOTE.—Breakage in transit, purchasers' responsibility.

SLATES

First-quality Slates from Penrhyn or Portmadoc, carriage paid in full truck loads to London Rate Station. Per 1,000 actual.

	£ s. d.
24 × 12	100 16 9
22 × 12	86 6 6
22 × 11	78 0 6
20 × 12	73 3 3
20 × 10	68 10 9
18 × 10	50 17 0
18 × 9	43 15 0
16 × 10	42 18 3
16 × 8	33 13 3

NOTE.—Breakage in transit, purchasers' responsibility.

TIMBER

				£ s. d.
Softwood—				
Joinery quality	Ex. Wharf	per standard		£105 to £125
Carcassing quality	do.	„		£90 to £100
1 in. Tongued and Grooved Flooring	do.	„		£106 0 0
Hardwood—				
Mahogany—	African S.E. ...	do.	per ft. cube	1 5 0
do.	Honduras do. ...	do.	„	3 5 0
Oak	European do. ...	do.	„	1 17 6
do.	Japanese do. ...	do.	„	2 5 0
do.	English Logs sawn	do.	„	1 5 0
Teak	8 in. average S.E.	do.	„	3 0 0
Walnut	African Logs sawn	do.	„	1 1 0

DOORS (in Lots I-II)

Delivered London area.

		£ s. d.
1½ in. 4 Horizontal Panel Pattern 4 in. deal		
2 ft. 0 in. × 6 ft. 6 in.	each	1 12 0
2 ft. 3 in. × 6 ft. 6 in.	„	1 13 0
2 ft. 6 in. × 6 ft. 6 in.	„	1 14 0
2 ft. 9 in. × 6 ft. 6 in.	„	1 16 6
2 in. do. but top panel open. Pattern 4 × G in deal		
2 ft. 6 in. × 6 ft. 6 in.	„	2 9 0
2 ft. 9 in. × 6 ft. 6 in.	„	2 11 6
2 in. Panel, top panel open. Pattern 2 × G in deal		
2 ft. 6 in. × 6 ft. 6 in.	„	2 1 9
2 ft. 9 in. × 6 ft. 6 in.	„	2 3 6

SUNDRIES

Delivered London area

		£ s. d.
1 in. Wood Wool Slabs, 6 ft. 0 in. × 2 ft. 0 in. in quantities of 1 ton (89 yds to 1 ton)	per yd.	5 8
1½ in do. (67 yds. to 1 ton) ...	„	7 4
2 in. do. (52 yds. to 1 ton) ...	„	8 11½
2½ in. do. (45 yds. to 1 ton) ...	„	10 3
3 in. do. (39 yds. to 1 ton) ...	„	11 5½
Quantities under 1 ton add 1d. per ½ in. of thickness.		
¼ in. imported insulation Board, quantities over 5,000 sq. ft.	per 100 sq. ft.	2 2 6
⅛ in Hardboard do.	„	2 3 6
¼ in. do. do.	„	3 5 0
¼ in. Asbestos Flat Building Sheets ...	per yd. sup	3 2
Roofing Felt, 1-ply	„	1 6
do. 2-ply	„	1 9
Best Scotch Glue, in slabs	per ½ cwt.	5 0 0
do. pearl	„	5 5 0
Croid Glue	28 lb.	2 5 0
Cut Nails 3 in. (1-ton lots)	per ton	54 5 0
do. 4 in. and up (1-ton lots)	„	50 15 0
Wire Nails, 3 in. (4-cwt. lots)	per cwt.	2 16 3
do. 4 in. and up (4-cwt. lots)	„	2 12 9

METALS

STEEL JOISTS, ETC.

Basis Joists—

		£ s. d.
6 in. × 5 in., 8 in. × 5 in., 8 in. × 6 in., 10 in. × 6 in. 12 in. × 6 in. plain cut to lengths delivered London area	per ton	37 10 0
Extra for sizes		
3 in. × 1½ in.	„	3 10 0
3 in. × 3 in., 4 in. × 3 in., 5 in. × 2½ in. ...	„	1 5 0
4 in. × 1½ in.	„	3 0 0
4½ in. × 1½ in., 24 in. × 7½ in.	„	2 0 0
5 in. × 3 in., 22 in. × 7 in.	„	1 0 0

		£ s. d.
6 in. × 3 in.	per ton	1 10 0
9 in. × 7 in.	„	5 0
10 in. × 4½ in., 12 in. × 5 in.	„	15 0
5 in. × 4½ in., 6 in. × 4½ in., 7 in. × 3½ in., 7 in. × 4 in., 8 in. × 4 in., 9 in. × 4 in., 10 in. × 5 in., 10 in. × 8 in., 12 in. × 8 in., 13 in. × 5 in., 14 in. × 5½ in., 14 in. × 6 in., 14 in. × 8 in., 15 in. × 5 in., 15 in. × 6 in., 16 in. × 6 in., 16 in. × 8 in., 18 in. × 6 in., 18 in. × 7 in., 18 in. × 8 in., 20 in. × 6½ in., 20 in. × 7½ in.	„	10 0
Steel angles average price	„	38 15 0
Steel tees average price	„	39 15 0
Fabricated work delivered London—		
R.S. Joists cut and fitted	„	52 10 0
Compound girders	„	57 15 0
Stanchions	„	63 0 0
Compound stanchions	„	66 10 0
In Roof Work—Trusses and Purlins	„	78 10 0
Average prices not for awkward work.		
Mild Steel Ferro-Concrete bars to BSS785 ex London		
Stock ⅜ in. diam., and upwards	„	39 12 0
¼ in. diam.	per ton extra	3 12 0
⅝ in. do.	„	2 17 0
½ in. do.	„	2 2 0
⅜ in. do.	„	1 7 0

MILD STEEL TUBES

Tubes to BSS1387 and Fittings. List prices and following discounts :

Galvanised Tube—	W.I. Fittings	Malleable Fittings
Class A − 31%		
Class B + 5½%	Light + 20½%	Malleable List − 39½%+35%
Class C + 21½%	Heavy + 28½%	
Black—		
Class A − 23%		
Class B − 13%	Light + 9%	Malleable List − 39½%
Class C − 3%	Heavy + 16½%	

C.I. HALF-ROUND GUTTERS

Delivered London per yd. in 6-ft. lengths

	Gutters	Nozzles	Stop Ends
3 in.	3/2	2/9	/10
3½ in.	3/5½	3/–	/10
4 in.	4/5½	3/5	1/2
4½ in.	4/10½	3/9	1/6
5 in.	5/5½	4/2	1/8

C.I.O.G. GUTTERS

3 in.	4/1	3/8	/11
3½ in.	4/6½	3/8	1/2
4 in.	5/–	3/9	1/6
4½ in.	5/5½	4/5	1/8
5 in.	5/11	5/1	1/11

C.I. RAIN-WATER PIPES

Per yd. in 6-ft. lengths	Pipe	Bends	Branches
2 in.	6/5½	3/5	4/10
2½ in.	6/9	3/9	6/8
3 in.	7/7	4/9	7/3
3½ in.	8/7	5/8	8/7
4in.	9/11½	6/11	10/2

L.C.C. COATED SOIL PIPES

2 in.	7/7½	5/10	7/2
2½ in.	8/1	6/6	8/11
3 in.	9/0½	7/2	10/8
3½ in.	10/1½	8/11	12/5
4 in.	11/6½	10/–	14/7

Above prices for gutters rain-water and soil pipes for under 3 cwt. lot only. Lots over 3 cwt. see List No. 3200 dated May 1, 1952, plus 10% and tonnage allowance. 4-ton lots 5 per cent. 2 ton lots 2½ per cent.

L.C.C. COATED DRAIN PIPES

In 9-ft.

	cwt. qr. lb.	per yd.	Bends	Branches
4 in.	1 1 17	20/5	14/3	25/-
6 in.	2 0 1	30/4	29/7	51/3

ASBESTOS RAIN-WATER PIPES AND FITTINGS

Orders under £30 less 12½ per cent. discount.
Orders over £30 less 17½ per cent. discount.

		2 in.	2½ in.	3 in.	4 in.
Pipes 6-ft. lengths	per yd.	3/9	4/–	4/10	6/5
Shoes... ...	each	2/5	2/8	3/2	4/3
Single Branches ...	„	3/9	4/6	5/4	7/6
Bends square or obtuse	„	2/8	2/11	3/9	5/4
Swan Necks 4½ in. proj.	„	2/11	3/9	4/3	5/11
do. 6 in. do.	„	3/2	3/9	4/10	6/5

ASBESTOS O.G. GUTTERS AND FITTINGS

		4 in.	4½ in.	5 in.	6 in.
Gutters 6-ft. lengths	per yd.	3/7	3/11	4/8	5/7½
Drop ends	each	2/10	3/4	3/10	4/7
Stop Ends	„	/10	/11	1/–	1/2
Angles	„	2/11	3/5	4/1	4/10
Nozzles	„	2/10	3/4	3/10	4/7
Union Clips ...	„	1/5	1/8	2/1	2/5

ASBESTOS HALF-ROUND GUTTERS AND FITTINGS

		3 in.	4 in.	4½ in.	5 in.	6 in.
Gutters 6-ft. lengths	per yd.	2/6	2/11½	3/0½	3/7	5/-
Drop ends	each	2/1	2/5	2/8	2/11	4/3
Stop ends	„	/9	/10	/11	1/–	1/2
Angles	„	2/5	2/8	2/11	3/2	4/3
Nozzles	„	2/1	2/5	2/8	2/11	4/3
Union Clips ...	„	1/-	1/1	1/2	1/4	2/-

METALS—*continued*

	Per ton basis in London £ s. d.
Iron—Staffordshire Crown Merchant Quality	39 10 0
Mild Steel Bars	37 15 0
Mild Steel Hoops	38 10 0

	Ex Merchant's Stock per ton Two-ton lots £ s. d.
Soft sheets C.R. and C.A.—	
20 gauge	45 19 6
24 gauge	47 4 6
26 gauge	48 14 6
Galvanised Corrugated sheets 6 ft. to 9 ft.—	
20 gauge	52 10 0
24 gauge	54 10 0
26 gauge	57 5 0
Galvanised Flat sheets C.R. and C.A.—	
20 gauge	53 10 0
24 gauge	55 10 0
26 gauge	58 5 0

Plumbers' Brass Work, Copper, Zinc, etc.

Delivered in London area. M.O.H.

All per doz.	½ in.	¾ in.	1 in.	1¼ in.	1½ in.	2 in.
Screwdown bib cocks Crutch head for iron	73/6	109/3				
Toilet bib cocks for iron ...	94/6	135/6				
Screwdown stop cocks for iron	63/-	91/3	179/6	308/9	441/-	778/-
do. with two unions for lead	85/-	126/-	223/9	400/-	529/-	1178/-
Double nut boiler screws ...	15/9	22/-	40/-	41/-	56/9	80/-
Heavy Croydon ball valves ...	65/-	148/-	226/9	413/9	586/-	
Plumbers' union brass lead to iron	16/6	20/-	33/-	57/9	71/-	138/9

	1¼ in.	1½ in.	2 in.	3 in.	3½ in.	4 in.
Caps and screws	28/6	34/9	50/6	78/9	100/9	131/3
Brass sleeves		26/3	26/3	47/3	63/-	64/-

	1½ × 6 lb.	1½ × 6 lb.	2 × 7 lb.	3 × 7 lb.
Lead P. trap with brass cleaning screws	59/-	74/-	103/-	176/6
Lead S. trap do.	71/-	88/3	127/6	225/6

	s. d.
Solder	
Plumbers' ... ... per lb.	3 0
Tinmen's ... ... ,,	3 7
Blow pipe ... ... ,,	3 9

Copper tubes BSS 659/1944 on the basic price of 27⅞d. per lb. plus gauge and manufacturing extras as follows. Minimum quantities, 3 cwt.

	Extra d.		d.
⅛ in. × 19 gauge ...	12½	Total per lb.	40⅛
¼ in. × 19 ,, ...	10¾	,, ,,	38⅝
1 in. × 18 ,, ...	9½	,, ,,	37⅛
1¼ in. × 18 ,, ...	8¾	,, ,,	36⅝
1½ in. × 18 ,, ...	8¾	,, ,,	36⅝
2 in. × 17 ,, ...	10¼	,, ,,	38⅛

		£ s. d.
Rolled Copper sheets up to 48 in. wide, basic price plus gauge and manufacturing extras	per ton	299 15 0
Sheet Zinc, 10 gauge (25 SWG) 5 cwt. lots upwards	per cwt.	6 16 0
do. 12 gauge (23 SWG) do. ...	,,	6 14 0
do. 14 gauge (21 SWG) do. ...	,,	6 12 9
Brass tubes basic price, plus gauge and manufacturing extras	per lb.	1 10⅞

LEAD SHEET AND PIPES

Basis selling price in minimum one-ton delivery to one address in London or Home Counties.

		£ s. d.
Lead Sheet, English, 3½ lb. substance and upwards	per ton	130 0 0
Lead Water Pipe in coils	,,	131 5 0
Lead Soil Pipe, 10 ft. or over 2 in. to 4 in. dia. ...	,,	132 15 0
do. over 4 in. dia.	,,	134 15 0
Lead Gas or Untinned Compo pipe	,,	132 15 0
Extras over Basis for quantities under 1 ton		
5 cwt. and under 1 ton	per cwt.	2 0
3 cwt. do. 5 cwt.	,,	4 0
1 cwt. do. 3 cwt.	,,	6 0

Smaller quantities than 1 cwt. priced specially.

Supplying sheet lead and lead pipe to less than basis weights and cutting to sizes less than basis charged extra according to current trade schedule.

Allowance for Old Lead, collected £85 10s. 0d. per ton weighed at buyer's works.

PLASTER, etc.

		£ s. d.
Coarse Pink in 1-ton loads and over Delivered on Site	per ton	7 6 6
do. White do. do. ...	,,	7 14 3
Sirapite Coarse do. do. ...	,,	7 9 0
do. Fine do. do. ...	,,	7 17 0
Blue Lias Lime in 6-ton loads	,,	6 9 6
Hydrated Lime do.	,,	5 12 6
Lump Lime do.	,,	5 2 0
White Keen's or Parian Cement in 1-ton loads ...	,,	10 4 0
Pink Keen's or Parian Cement in 1-ton loads ...	,,	9 18 6
Granite Chips in 6-ton loads	,,	2 6 3
Hair	per cwt.	4 17 6
Gypsum Plaster Lath or Base Board ⅜ in. thick 600 yds. and over in one delivery. Delivered site ...	per yd.	2 3
Gypsum Plaster Wall Boards, 3 and 4 ft. wide, 6 to 12 ft., ½ in. thick, 600 yds. and over in one delivery Delivered site	,,	2 6

PAINT AND DISTEMPER

Delivered London area		£ s. d.
Ceiling Distemper	per cwt.	1 12 0
Washable Distemper	,,	5 12 0
Gloss Paint	per gal.	2 13 0
Snowcem cement paint (in 1 cwt. drums) ...	per cwt.	3 11 0

Lead Products and Oils.

Ground White Lead, 1 cwt. kegs	per cwt.	8 10 0
Genuine White Lead Paint, 20 gal. lots in 1 gal. tins	per gal.	3 0 0
Genuine Red Lead, Dry, 1 cwt. keg	per cwt.	6 12 6
Genuine Linseed Oil Putty, 1 cwt. keg	,,	2 7 0
Size XD quality, 28 lb.	per tin	9 0
Raw Linseed Oil (5 gal.) Drums extra	per gal.	12 6
Boiled Linseed Oil (5 gal.) do.	,,	13 0

Sundries.

Turpentine substitute (5 gal) Drums extra ...	,,	5 6½
do. do. (40 gal. drum) do. ...	,,	4 8½
Solignum, Brown (5 gal. cans) Exterior	,,	6 6
Creosote (40 gal. barrels)	,,	2 0
Paste Powder (1 lb. packets)	per lb.	1 6
White Lining Paper	per piece	1 2

VARNISHES, etc.

Delivered London area.		£ s. d.
Oak Varnish, Outside or Inside	per gal.	1 12 6
Oak Pale Copal do.	,,	1 15 0
Hard Drying Oak for Inside	,,	1 17 6
Crystal Paper Varnish do.	,,	2 2 6
Eggshell Flat Varnish do.	,,	2 2 6
Finest Carriage Varnish	,,	2 10 0
Front Door Varnish	,,	1 17 6
Japan Gold Size	,,	1 10 0
Black Japan	,,	1 5 0
Brunswick Black	,,	1 0 0
Berlin Black	,,	1 5 0
Terebene	,,	1 5 0
Knotting (1 gal. bottles free)	,,	2 0 0
French and Brush Polish (do.)	,,	1 13 0

GLASS

Delivered London area.	Per ft. super s. d.
18 oz. Sheet Glass, Ordinary Glazing Quality. Cut Sizes ...	5½
24 oz. ,, ,, ,, ,, ,, ,, ...	7¼
26 oz. ,, ,, ,, ,, ,, ,, ...	9½
32 oz. ,, ,, ,, ,, ,, ,, ...	1 0
⅛ in. Rolled Plate...	9
⅜ in. and ½ in. Rough Cast	1 0
⅛ in. Figured Rolled and Cathedral, Standard patterns : White	9
do. Standard Tints	1 4½
do. Special Tints	2 9
⅛ in. Cross Flexon, Pinstripe, Hammerstripe, Reedlyte and Luminating	1 1
¼ in. Wired Cast	1 2
¼ in. Georgian Wired Cast	1 2½

Hollow Glass Blocks—		Each
P.B.2	5¾ × 5¾ × 3⅞ in.	2 9
P.B.3	7⅞ × 7⅞ × 3⅞ in.	4 2
P.B.32	7⅞ × 7⅞ × 3⅞ in.	4 2
Radiused Corner Blocks to match up with—		
P.B.2	... ...	5 3
P.B.3	... ...	6 9
P.B.32	... ...	6 9

¼ in. Polished Plate Glass, G.G. Quality—		Per ft. super
In plates not exceeding	2 ft. sup.	3 7
,, ,, ,, ,,	5 ft. sup.	4 5
,, ,, ,, ,,	45 ft. sup.	5 1
,, ,, ,, ,,	100 ft. sup.	5 6

¼ in. Polished Plate, extra sizes, *i.e.*, plates exceeding 100 ft. sup. or 160 in. one way or 96 in. both ways. G.G. quality—

Not exceeding 135 ft. sup. or 250 in. one way or 135 in. both ways	8 4
Not exceeding 180 ft. sup., or ditto	11 3
Not exceeding 200 ft. sup., or ditto	16 0

Plates exceeding 200 ft. sup. prices on application.

Substances other than ¼ in. Polished Plate at Special Prices

Quantity Tariff—Sheet and Sundry Glass

The following prices apply to minimum quantities of one size and one pattern delivered by the manufacturer to one site at one time.

Description of Glass	Minimum quantity.	Per ft. super. s. d.
18 oz. sheet O.Q.	3,000	4
24 oz. ,, ,, ...	2,000	5¼
26 oz. ,, ,, ...	2,000	7⅛
32 oz. ,, ,, ...	2,000	9½
⅛ in. Rolled Plate	1,000	7½
⅛ in. Figured Rolled and Cathedral Standard Patterns, White	1,000	7½
⅛ in. Cross Flexon, Pinstripe, Hammerstripe, Reeded, Luminating and Spotlyte	1,000	10½
⅜ in. and ½ in. Rolled Plate or Rough Cast ...	2,000	10⅜
¼ in. Wired Cast, Hexagonal	2,000	1 0½
¼ in. Georgian Wired Cast	2,000	1 0⅜

The Builder

CURRENT RATES OF WAGES

AS FROM MAY 24, 1954. **(Every endeavour is made to ensure accuracy but we cannot be responsible for errors.)**

KEY TO SCHEDULE OF GRADE RATES.

Grade Classification.	A	A1	A2	A3
Craftsmen	3/9	3/8½	3/8	3/7½
Labourers	3/3½	3/3	3/2½	3/2

Town.	*Grade.*
Aberavon	A
Aberdare	A
Abergavenny	A
Abingdon	A2
Accrington	A
Addlestone	A
Aldeburgh	A2
Aldershot District	A2
Alfreton U.D.	A
Alnwick	A1
Altrincham	A
Amble	A1
Amersham	A1
Ammanford	A
Andover	A2
Ardingly	A2
Arundel	A2
Ascot	A2
Ashby-de-la-Zouch U.D.	A
Ashby Woulds U.D.	A
Ashford (Kent)	A2
Ashford (Middlesex)	A
Ashington	A
Ashtead	A
Ashton-under-Lyne	A
Aspatria and Brayton	A2
Atherstone R.D. (parts of)	A
Aylesbury	A2
Aylesby (Yorks)	A
Aylesham	A2
Bagshot	A2
Bakewell U.D.	A2
Banbury	A2
Barnard Castle U.D.	A
Barnoldswick U.D.	A1
Barnsley	A
Barrow-in-Furness	A
Barrow-upon-Soar R.D. (exc. Thrussington A2)	A
Barry	A
Basford R.D. (exc. Willough-by-on-the-Wolds A2)	A
Basingstoke	A1
Bath	A
Batley	A
Baxterley	A1
Beaconsfield & District	A1
Beamish	A
Bearl	A
Bearpark	A
Beccles	A2
Bedale R.D.	A
Bedford	A
Bedlington	A
Bedwas	A
Beeston & Stapleford U.D.	A
Belper U.D.	A
Belton	A
Berkhamsted	A
Berrington	A1
Berwick District	A
Beverley	A
Bexhill-on-Sea	A2
Biggleswade	A2
Billericay	A
Billing	A
Billingham U.D.	A
Bilsthorpe	A
Birchington	A2
Birkenhead	*
Birmingham C.B.	†A
Bishop Auckland	A
Bishop's Stortford	A
Bispham	A
Blackburn	A
Blackpool	A
Blackwell R.D.	A
Blaydon U.D.	A
Blidworth	A
Blyth	A
Bognor Regis	A2
Boldon U.D.	A
Bolsover U.D.	A
Bolton	A
Bourne End	A1
Bournemouth District	A
Bracknell	A2
Bradford	A
Bradford-on-Avon	A2
Braintree	A1
Breconshire, County of...	‡A2
Brent Knoll	A2
Brentwood	A
Bridlington	A
Brierfield	A
Brighouse	A
Brighton	A
Bristol	A
Broadstairs	A2
Bromsgrove U.D.	A
Brough	A
Broughton (Cheshire)	A
Buckley	A
Bungay	A2
Burnham-on-Crouch	A2
Burnley	A
Burton-on-Trent C.B.	A
Bury	A
Bury St. Edmunds	A1
Buxton	A
Byfleet	A1
Calder Valley	A
Cambridge	A
Cannock U.D.	A
Canterbury	A2
Cardiff	A
Cardiganshire, County of	‡A2
Carlisle	A
Carmarthenshire, Cnty of	‡A2
Carnarvonshire, Cnty. of	‡A3
Carnforth	A
Castleford	A
Caterham	A
Chapel-en-le-Frith	A
Charmy Down	A
Chatham & District	A1
Cheadle (Staffs) R.D.	A
Chelmsford	A
Cheltenham	A
Chepstow	A1
Chertsey	A
Chester	A
Chesterfield M.B.	A
Chesterfield R.D.	A
Chester-le-Street U.D.	A
Chichester	A2
Chippenham (inc. Chippen-ham Within and Harden-huish	A2
Chorley	A
Clacton	A1
Cleethorpes	A
Clevedon	A1
Cleveleys	A
Clitheroe	A
Coalville U.D.	A
Cobham (Surrey)	A
Colchester	A
Colne	A
Colwyn Bay	A1
Congleton	A1
Consett	A
Conway	A1
Cornwall, County of	‡A2
Coventry C.B.	A
Cranbrook	A2
Cranleigh	A2
Crawley (Sussex)	A2
Crewe	A
Cromer	A1
Crowborough	A2
Cuckfield	A2
Dalton-in-Furness	A
Darlington District	A
Darwen	A
Deal	A2
Denbigh Town	A2
Derby C.B.	A
Devizes	A2
Devon, County of	‡A2
Dewsbury	A
Didcot	A2
Diss	A2
Doncaster C.B.	A
Dorking	A
Dorset, County of (except-ing Poole, Swanage and Wimborne Al)	A2
Dover	A2
Dovercourt	A
Driffield U.D.	A1
Droitwich M.B.	A1
Dudley M.B.	A
Dunstable	A
Durham City	A
Eastbourne	A1
E. Glam. & Mon. Val.	A
East Grinstead District	A2
Eastwood (Notts.) U.D.	A
Ebbw Vale & District	A
Edenbridge	A2
Ely	A2
Epping	A
Exeter	A
Fakenham	A2
Falmouth	A2
Fareham	A
Faversham	A2
Felixstowe	A1
Filey U.D.	A
Fleetwood	A
Flint	A
Folkestone	A2
Frinton	A1
Frome	A1
Gainsborough U.D.	A
Gateshead	A
Gillingham (Kent)	A1
Glossop	A
Gloucester	A
Gloucestershire, Cnty. of	‡A2
Godalming	A2
Goole M.B.	A
Gosport	A
Grantham M.B.	A
Gravesend	A
Great Yarmouth	A
Grimsby C.B. & R.D.(part)	A
Grimsby R.D. (remainder)	A2
Guildford District	A2
Guilsborough	A1
Guiseley	A
Halesowen M.B.	A
Halifax	A
Halstead	A2
Haresfield	A1
Harlow	A
Harpenden	A
Harrogate	A
Hartlepool	A
Harwich	A
Haslemere	A2
Hastings	A2
Hatfield (Herts.)	A
Haywards Heath	A2
Hemel Hempstead	A
Henley-on-Thames	A2
Hereford	A2
Herefordshire, Cnty. of	‡A2
Herne Bay	A2
Hertford	A
Hexham U.D.	A
Heysham	A
High Wycombe	A1
Highworth	A2
Hinckley U.D.	A
Hitchin	A
Hoddesdon	A
Horley	A2
Horsham	A2
Horwich	A
Huddersfield	A
Hull	A
Hunstanton	A2
Huntingdon (Staffs)	A
Ilkley	A
Ingatestone	A1
Ipswich	A
Isle of Sheppey	A2
Isle of Thanet	A2
Isle of Wight	A2
Jarrow M.B.	A
Keighley	A
Kendal	A
Kenilworth U.D.	A
Kettering M.B.	A
Keynsham	A
Kidderminster M.B.	A
King's Lynn	A1
Kingskerswell	A1
Kingsteignton	A1
Kirkham	A
Knaresborough U.D.	A
Knowle	A1
Lancaster	A
Leamington M. B.	A
Leatherhead	A
Leeds	A
Leicester C.B.	A
Leighton Buzzard	A1
Letchworth	A1
Lewes	A2
Lichfield M.B.	A
Lincoln C.B.	A
Littlehampton	A2
Liverpool	*
Llandudno	A1
Llanelly	A
London	*
Long Eaton	A
Loughborough M.B.	A
Louth M.B.	A2
Lowestoft	A
Loxton	A2
Luton	A
Lyneham (Devon)	A2
Macclesfield	A
Maidenhead	A1
Maidstone	A1
Maltby	A
Maldon (Essex)	A1
Malvern U.D.	A1
Manchester	A
Manningtree	A1
Mansfield M.B.	A
March	A2
Margate	A2
Market Harborough U.D.	A
Maryport	A
Matlock U.D.	A1
Melksham	A2
Melton Constable	A2
Melton Mowbray U.D.	A1
Merthyr	A
Middlesbrough	A
Middleton	A
Middlewich	A
Milford Haven	A1
Morecambe	A
Morley	A
Mundesley	A2
Nantwich	A
Nelson	A
Newark-on-Trent R.D.	A1
Newbury	A2
Newcastle-on-Tyne	A
Newcastle-under-Lyme	A
New Forest District	A1
Newmarket	A1
Newport, Mon.	A
Newport Pagnell	A2
Newton Abbot	A1
Northallerton Dist.	A
Northampton C.B.	A
North Shields	A
Norton Radstock	A1
Norwich	A
Nottingham C.B.	A
Nuneaton M.B.	A
Oakham U.D.	A2
Oldham	A
Ongar	A
Ormskirk	A
Ossett and Horbury	A
Oxford	A
Oxted	A1
Paignton	A1
Peterborough	A
" Soke	A1
Pickering	A3
Plymouth	A
Pontefract	A
Pontypridd District	A
Portishead	A
Portland Stoneyards	A
Portsmouth	A
Port Talbot	A
Preston	A
Pudsey	A
Pulborough	A2
Radnorshire, County of	‡A2
Ramsgate	A2
Rayleigh	A
Reading	A
Redcar B.	A
Redditch U.D.	A
Redhill and Reigate	A
Ripon	A3
Rochdale	A
Rochester	A1
Rotherham	A
Rugby M.B.	A
Saffron Walden	A2
St. Albans	A
St. Helens	A
St. Neots	A2
Salisbury City	A2
Salisbury Plain	A2
Sawbridgeworth	A
Saxmundham	A2
Scarborough	A
Scunthorpe	A
Selby	A
Sevenoaks	A1
Sheerness	A2
Sheffield	A
Shipley	A
Shoeburyness	A
Shoreham	A
Shrewsbury M.B.	A
Sittingbourne	A2
Skegness U.D.	A1
Skipton U.D.	A
Sleaford U.D.	A2
Slough	A1
Smethwick C.B.	†A
Snettisham	A2
Somerset, County of	‡A2
Southampton	A
Southend-on-Sea Dist.	A
Southport	A
South Shields C.B.	A
Spalding U.D.	A2
Stafford M.B.	A
Staines	A
Stamford M.B.	A1
Stantonwick	A
Stevenage	A
Stockport	A
Stockton R.D.	A
Stockton-on-Tees	A
Stoke-on-Trent C.B.	A
Stoke Orchard	A1
Stourbridge M.B.	A
Stourport U.D.	A
Stowmarket	A1
Stratford-on-Avon M.B.	A
Sunderland District	A
Sunningdale	A1
Sutton Coldfield M.B.	A
Swaffham	A2
Swanage	A1
Swansea	A
Swindon	A1
Swinton U.D.	A
Tamworth M.B.	A
Tenterden	A2
Tewkesbury	A1
Thames Haven	A
Thetford	A2
Thorpe Bay	A
Thurrock U.D.C. Area	A
" North of, to Billericay	A
Tilbury	A
Todmorden	A
Tonbridge	A1
Torquay	A1
Totnes	A1
Trowbridge	A2
Tunbridge Wells	A1
Tynemouth C.B.	A
Uppingham (Salop)	A1
Uttoxeter U.D.	A2
Wakefield	A
Wallsend B.	A
Walsall C.B.	A
Walsden	A
Walton-on-Naze	A1
Ware	A
Warminster	A2
Warrington	A
Warwick M.B.	A
Wellington U.D.	A
Wells (Norfolk)	A2
Welwyn	A
Welwyn Gar. City	A
West Bromwich C.B.	A
Westbury	A2
Westcliff-on-Sea	A
Westerham	A1
Weston-super-Mare	A1
Weybridge	A
Weymouth	A1
Whitby U.D.	A1
Whitstable and District	A2
Wickford	A
Widnes	A
Wigan	A
Wigton	A2
Willington	A
Wilmslow	A
Wilts. County of	‡A2
Winchester	A1
Windermere	A3
Windsor and Eton	A1
Wisbech	A2
Witham	A1
Woking (District)	A1
Wokingham	A2
Wolverhampton C.B.	A
Woodbridge	A2
Worcester C.B.	A
Workington	A
Worksop M.B.	A
Worthing	A2
Wrexham (incl. Cefn)	A
Wroughton	A1
Wylam	A
Wymondham	A2
York	A

*For Birkenhead, Liverpool and London the rates are:—Craftsmen, 3s. 10½d.; Labourers, 3s. 5d. In the case of London the rate beyond the 12-mile radius is:—Craftsmen, 3s. 10d.; Labourers, 3s. 4½d. † Plus 2d. per working day. ‡ This is the County rate and applies except where higher grades are stated.

NOTE.—Carpenters, Joiners and Plumbers in all towns and districts receive 2d. per day Tool Allowances.

WOMEN'S RATES.—In all districts throughout the country the rate of wages for women engaged in craft processes is 2s. 8d. per hour. Women introduced to carry out work other than craft processes, 2s. 4d. per hour.

For Building Trade Wages in Scotland see page 958

NEWS IN BRIEF

War Damage Appointment

The War Damage Commission have appointed Mr. Percy V. Burnett, FRIBA, to be a Deputy Commissioner. He will be concerned mainly with cases in and around London and the Home Counties.

Annual General Meeting

The annual general meeting of the Builders' Benevolent Institution will be held at their offices at 47, Bedford-square, WC1, on June 17.

Building Department Post

Birmingham Corporation are now seeking to engage a general manager for their new direct labour building department at a salary of £1,600 to £2,000 a year according to qualifications.

Building Surveyors' Examination

At the RIBA examination for the office of building surveyor under local authorities, held in April, 19 candidates presented themselves, and the following were successful: F. H. Burton, F. E. Casemore, L. G. Chilcott, J. W. Hall, R. V. Kidd, R. Sharpe, N. E. Whitby, F. W. Woodcock.

Divisional Engineer

The promotion of Mr. R. J. Dickson, MIH & VE, 43 years old, of the chief engineer's department of the London County Council, to the position of divisional engineer, has been recommended by the General Purposes Committee. The salary is £1,650, rising to £1,950.

Sapper Reunion

To-morrow evening, May 29, the Royal Engineers' Association are to hold the second London sapper reunion at the Duke of York's HQ, Chelsea, SW3. The Master of Ceremonies will be Mr. Philip Slessor, and the proceedings will commence at 7 p.m. and continue until 11 p.m. Tickets, price 3s. each, can be obtained from Mr. J. S. Pearson, Room 31, The Horse Guards, Whitehall, SW1, or at the door.

Book of the Year

The Britannica Book of the Year, 1954, recalling the events of 1953, has been published at £3 3s. by Encyclopædia Britannica, Ltd., 90, Dean-street, W1. Of the total of 493 contributors to the book, 327 come from the United Kingdom and the Commonwealth. The article on the building and construction industry was contributed by Mr. D. A. G. Reid, principal of the Brixton School of Building, Ferndale-road, SW4.

ARCHITECTS AT GOLF

The RIBA Golfing Society invitation meeting with Liverpool and Wessex Architects' Golfing Societies was held at Walton Heath Golf Club and was well supported. The Stableford Competition was arranged for the morning on the old course. The guests' spoon was won by Ivor Day with a score of 31½ points. The London spoon was won by H. St. John Harrison with a score of 33¾ points, the runner-up being R. G. Scott with a score of 32½ points. In the afternoon a fourball bogey competition was held on the new course, which was won by R. C. Scott, handicap 2, and A. D. McGill, handicap 10, with the remarkable score of 11 up on bogey. The runners-up, each with a score of two up, were Sir Giles Gilbert Scott and Eric Cole; C. A. Townsend and Paul K. Pope; P. Hickey and Alwyn Jones, the latter pair being awarded the second sweep on the second nine holes. A dinner was held in the evening at the Burford Bridge Hotel, giving a further opportunity for members and guests to get acquainted. The RIBA Golfing Society hopes that provincial architects will form their own societies in different parts of the country and become affiliated.

ACCIDENT PREVENTION GROUP

Chairman's Report

THE VIEW that the London Building and Engineering Contractors' Accident Prevention Group should interest themselves more closely in getting rid of accident causes in the industries they served, was expressed by MR. W. DAWES, MInstGasE, chairman of the Group, in his annual report. As an example, at the moment there was no plan for industrial training for scaffolding. It should be quite clear to everyone that the work of the scaffolder was of the greatest importance to all on a building site, as at some time or other everyone employed had to rely on the skill and integrity of the scaffolder. The scarcity of scaffolders at the moment was very acute, and most companies felt the shortage. Even so, no real attempt, to his knowledge, had been made to start courses for training these men.

Mr. Dawes went on to say that he believed the trade unions had a desire to see accident prevention practised on contracts by both employers and their men. He suggested to them that they would make a sincere contribution to their wishes by putting the soft pedal on claims at common law. The employer was not always to blame for an accident, and no contractor of standing was going to see a man suffer if the contractor was in breach of one of the Building Regulations. It was not right for safety officers to be pinned down to their desks reinvestigating accidents which happened months previously instead of visiting their sites to help in the good work of accident prevention. This was due to late trivial causes at common law which ought not to have been brought.

BRITISH STANDARDS

Aluminium Fixing Accessories

RECENTLY issued by the British Standards Institution is BS 2465, "Aluminium Fixing Accessories for Building Purposes." The increasing use of aluminium cladding for building purposes has led to the production of aluminium fixing accessories and these are also suitable for use with other cladding materials provided that suitable precautions are taken if any possibility of electrolytic action exists. Usually a coat of bitumen paint affords sufficient protection and further references to this are made in BS Code of Practice CP 3, "Functional requirements of buildings," chapter 9, "Durability."

The types of fixing accessories specified are similar to those manufactured from ferrous metal, as given in BS 1494 "Fixing accessories for building purposes." At present the standard gives the requirements in respect of materials and dimensions for hook bolts and nuts, drive screws, washers for aluminium roofing sheets, and roofing bolts and nuts, including gutter bolts. It is proposed to consider the addition of other items to the range and the addition of other alloys for manufacture as and when their use becomes recognised.

Copies may be obtained from the Institution, 2, Park-street, W1, price 2s. 6d.

ROAD RESEARCH

Report for 1953

A SUMMARY of the work carried out by the Road Research Laboratory (DSIR) during 1953 is given in the annual report of the Road Research Board which has now been published. The following points have been extracted from the report:—

Road structure.—Experiments in road base construction on trunk road A1, showed that all forms of stone base used give a much stronger road when covered with an impervious asphalt surfacing than when covered with one which allowed water to penetrate. Tests with a Dutch vibrating machine, with an electro-magnetic vibration generator at the Laboratory have indicated that these machines provide a way of detecting roads which are weak and likely to fail under traffic.

Soil stabilisation.—Single-pass machines for mixing soil and cement "in-place" are now available in this country and have been tested at the Laboratory. The modern "mix-in-place" mixer gave a higher efficiency of mixing in a single pass than a machine of the older type in eight passes.

Control of concrete quality.—To assist in the field control of concrete quality a buoyancy meter and a modified compacting factor apparatus have been designed. The first gives a direct reading of moisture content in fine and coarse aggregates with only two weighings and the second can be set to tell the mixer-driver how much the added water needs to be adjusted to maintain workability at the pre-determined value.

Use of local aggregates.—Points of interest from the extensive series of road trials made during the last 10 years are summarised. They show that slag-bitumen carpets can be used successfully within a wide range of composition; that there has been no satisfactory range of quartzite gravel-bitumen carpets with fines less than 20 per cent.; and that the limestone used on the Bath-Bristol road became slippery and needed surface-dressing after three years.

Change of Name

The Incorporated Institute of British Decorators is now to be known as the Incorporated Institute of British Decorators and Interior Designers. The syllabus of the Associateship examinations has been widened to include a special examination for students desiring to qualify as interior designers. Full particulars can be obtained from the Secretary, Drayton House, Gordon-street, WC1.

Surveyors' Meeting

A meeting of the West of England branch of the Institute of Quantity Surveyors was held at Plymouth on May 17. The president, Mr. H. V. Maee, who gave a talk on "Examination Essentials," was introduced by the branch chairman, Mr. G. T. West. Later, the annual general meeting of the Plymouth Chapter was held, and the following officers and committee elected for the ensuing year: chairman, Mr. D. Gaskell-Brown; secretary, Mr. R. G. Paltridge; committee, Messrs. F. J. Charles, D. C. Palmer, R. G. Mitchell, J. V. Ormond and M. W. Thorn.

Directory of Members

The 1954 directory of members of the Reinforced Concrete Association has now been issued, and is obtainable from their offices at 94-98, Petty France, SW1.

TRADE NEWS

Paint Removers

Pamphlets containing comprehensive notes on the methods of rubbing down and cleaning paintwork are being distributed by J. Manger and Son, Ltd., 57d, Kingsland High-street, E8, makers of sugar soap and "Quick-stryp" paint removers.

Wall Ties

A single wire wall-tie manufactured by John Smith, Ltd., Mitre Mills, Richard-street, Birmingham 7, is claimed to be more efficient and easier to handle than existing types. Known as the "Twin-Triangle" wire wall-tie, it can be produced in large quantities on a special type of wire forming machine. There are five versions, two of which conform to BS 1243: 1954. Lying completely flat, the tie will not disintegrate mortar, and provides a more definite anchorage.

Pipe Aligner

A tool designed to align pipes with even inverts, and obviate the expense of self-centering pipes or mastic jointing, has been placed on the market by Verrolec, Ltd., 27, Balfour House, Finsbury-pavement, Moorgate, EC2. It consists of an expanding toggle with a pivoted top shoe and curved bottom shoe which is placed inside the pipe and operated by a spring-loaded connecting rod and handle. The top shoe automatically adjusts itself to any inequality of diameter, and a stop provided near the handle ensures that in the expanded position half the shoes are in one pipe and half in the adjoining. The tool is understood to eliminate the need for a gasket or collar, and the pipe interiors are left quite clean.

Soil Borer

To provide a low-cost rapid mechanical method of shallow-depth boring, Le Grand, Sutcliff and Gell, Ltd., Southall, Middlesex, have produced their 16/20 soil borer. It provides vertical or angle drilling of up to 22 in. diameter and 16 ft. in depth and is transportable on lorry or trailer. It can be used in most soils, having a penetration of up to 1 ft. per min., and is self-powered by an 8-hp 1,200-rpm air-cooled twin-cylinder diesel engine. A reversing gear allows reversal of all controlled motions, and the average lifting rate for boring bar and tool is 3 ft./sec. Mast erection can be carried out in one minute, and the unmounted machine weighs about 2 tons. The machine is based on the designs of the Road Research Laboratory, Department of Scientific and Industrial Research.

Mobile Exhibition

A mobile showroom with an interior fitted to show the various applications of "Cascalite" is being operated by the Cascelloid Division of the British Xylonite Co., Ltd., Larks Hall-road, E4, and is making a tour of Great Britain. "Cascalite" is a translucent sheeting for roofing, skylights and windows, and is claimed by the company to be completely shatterproof, even when struck with a hammer. It can be sawn, cut, nailed and handled like ordinary hardboard, yet is understood to be lighter than aluminium and stronger than steel. The company also states it to be unaffected by moisture or temperature and immune to the corrosive action of fumes, acids and alkalis in all normal concentrations. The sheeting allows 75 per cent. of the sunlight to pass in a diffused form.

LONDON APPRENTICES

1,000 More Required

TO meet the rapidly growing demand for trained craftsmen in the building industry in London, the LMBA is hoping to find room among its 1,500 members for a thousand additional new apprentices at the close of the school session next July.

In a letter to his members, inviting them in their own interests to take on additional boys and train them, the president, Mr. R. S. Williams, says:—

This year may well be a record one in the history of the building industry, for the opportunities open to us are far more and varied than any we have known since the war. But to take full advantage of these opportunities, we must maintain, or rather increase, the numbers of our craftsmen.

The chairman of the Apprenticeship Committee tells me that more and more of the boys leaving school are eager to come into the building industry, and that if only we will provide vacancies for them, he can get an additional thousand or more boys a year, most of them at the end of the school session in July.

Employment officers and principals of colleges and schools are encouraging the better type of boy to enter our industry. Unfortunately, they are hampered by lack of vacancies, and in consequence, we are losing many potentially good craftsmen to other industries. This vital challenge must be met.

Over the years a progressive shortage of skilled labour will make it increasingly difficult for you to give that proficient and economical service which must be the foundation of your success. I submit, therefore, that it is in your own interests to consider very seriously your position and responsibility in regard to this problem.

If you already train apprentices you know the benefits which accrue to you by so doing. Can you add to your numbers? If you have none will you take at least one boy as an experiment?

"THE BUILDER"

COST of BUILDING CHART

Current Edition Ready

THE Cost of Building Chart which Mr. H. J. Venning, FRICS, first prepared in 1952 *for "The Builder" and reprinted in* 1953, *has now been brought up to date to include current materials prices and the wages increases of* 1*d. per hour (granted as from February* 1) *and of* 1½*d. per hour awarded by the National Joint Council to take effect on May* 24.

The chart shows (1939 *being taken as datum at* 100) *that the level of building costs now stands at* 332, *a rise since January*, 1953, *of* 12 *points.*

The chart and accompanying table of wages increases and guarantees since 1939 *is being reprinted on light card. Copies may be ordered from the Publisher, "The Builder," The Builder House, Catherine-street, Aldwych, WC2, price* 1*s. each, plus* 3*d. postage for any number of copies up to* 12. *Orders for* 12 *or more charts will be sent post free. Cash should accompany orders.*

BUILDERS' HOUSING AIMS

"Avoid Mistakes of the 1930s"

MR. GEORGE GROSVENOR, National president, speaking at the half-yearly general meeting of the Yorkshire Federation of Building Trades Employers, at Harrogate, on Tuesday, said that house building by private enterprise was coming into its own again. The figures were going up and up each month and they looked forward to the time when, once again, private enterprise would be building a quarter of a million houses every year.

"We must now concentrate on houses which are a pleasure to look at as well as to live in," he declared. "A lot of houses built between the wars fell below this standard. To-day, there can be no place for plain brick boxes with no grace, no line, no proportion. A house ought to grow out of the ground and fit into its background. There are already good examples of this, small houses as well as big, all over England on both municipal and private estates.

"Our aim must be to build houses that people will come to look at; that we can be proud of and that our grandchildren will want to copy. They need not cost more; they may cost less than a mock Tudor or Gothic. Let us avoid the mistakes of the 1930s and make the 1950s famous for some of the best house-building—the best looking as well as the soundest—that we have ever had. And by private enterprise."

LCC

Form of Building Contract

AT A MEETING of the LCC on May 18, MR. NORMAN FARMER asked the chairman of the Housing Committee whether, in view of the assurance he was given by the chairman of the Committee on February 2, he could now indicate whether the generally accepted form of contract of the Royal Institute of British Architects would in future be used by the Council.

In reply, MR. R. E. GOODWIN said he was answering this question by arrangement with the chairman of the Housing Committee. The matter of the form of the "up and down" clause used by the Council was receiving the full consideration which was promised and a report would be made to the Council in due course.

Discussions on the more general question of the use of the RIBA standard form of contract had taken place between the Council's officers and representatives of the building industry over a considerable period and despite willingness on the part of the Council's representatives to consider a number of amendments to bring the Council's standard form close to the RIBA form certain fundamental differences between the contract conditions had been revealed in the two forms. The Association of Municipal Corporations and the County Councils Association were also separately considering the question of modifications necessary to the RIBA form to meet their requirements and the Council had been invited to join in these discussions. At a later stage it was intended to discuss the local authorities' requirements with the building industry. From the nature of the subject these negotiations would necessarily be protracted and meanwhile he would not be prepared to recommend that the Council should abandon its present standard form of contract.

MR. FARMER: "Whilst thanking the chairman for his very full report, is he aware that the methods at present employed by this Council are not only very costly but cause considerable dissatisfaction among the contractors?"

OVERSEAS BUILDING

[From Our Own Correspondents]

Greece. — The organisers of the Greek Earthquake Appeal Fund which was set up after the earthquakes in the Ionian Islands have made a further appeal for aid for the sufferers in the recent earthquake disaster in Thessaly. Over £117,000 has already been subscribed, and this money is being used in ways which, in consultation with the Greek Government, the Committee have decided will be of maximum benefit to Greece.

The Greek ministry responsible for the rebuilding of the islands have made plans for new towns and villages which provide for earthquake-resistant houses, and the ministry have asked for British materials to provide light roofing and metal windows and door frames. Already £11,000 has been spent on 190,000 ft. of Dexion angle, £41,000 on water pipes and fittings, and between £16,000 and £20,000 on stone-crushing machinery. Other materials needed include plasterboard, insulation material and a certain type of asbestos tile which is said to be particularly suitable for use in the locality.

Iraq.—The Development Board has awarded a contract to a local firm for the construction of 500 houses for farm workers at Basra at a cost of about £200,000. A contract for the Saklawiya drainage project has been awarded to a local firm, the cost being in the region of £280,000.

There are proposals for the establishment of a modern rayon factory in Iraq, and the Director General of Industries has submitted a report to the Development Board for a factory producing 1,500 tons a year, together with an associated plant for cellulose. A company in which the Industrial Bank is interested is being established to produce gypsum for use in local building construction.

Recently a committee was set up in Iraq representing the Ministry of Economics Development Board and the Industrial Bank, to consider the building of factories to produce glassware, tyres, electrical plant, chemicals, carpets, car assembly plants, cement, textiles, paper and sugar. The Development Board has allocated considerable sums for the extension of State hotels, and the building of new ones in order to attract tourists to northern Iraq.

Nyasaland.—The Blantyre-Limbe power station which was opened recently by the Governor of Nyasaland, Sir Geoffrey Colby, will mark a turning point in the development of this area. Built at a cost of £413,000 the power station generates 70,000 kws. Better roads are being built, a modern telephone system is to be instituted and there are schemes on hand for the development of Nyasaland which will mean the building of factories and townships for both white and coloured populations. Industrialists are considering opening plants in the Shire Valley and there are tremendous possibilities for the future prosperity of that part of the country.

Portuguese West Africa.—A limited company is being formed in Portuguese West Africa to finance a sack-making factory which is to be built in Loanda. The factory will be large enough to produce 1,200,000 sacks a year and will be constructed so as to allow expansion to enable production of 5m. sacks a year.

The municipal authorities of the province of Bei are studying the possibilities of harnessing the upper waters of the River Cuito for the supply of electric power to the city of Silvaporto.

The municipal authorities of Mocamedes are asking the Bank of Angola for a substantial loan to enable construction to commence on a new generating group for the city.

Tenders have been called for by the Government for the construction of five silos in the railway stations at Longonjo, Villa Robert Williams, Nova Lisboa, Vila Nova and Vila General Marchado, along the Benguela railway.

Building Research in Canada

Progress reports numbers five and six on "Building Research in Canada," issued by the Division of Building Research, National Research Council, Ottawa, contain descriptions of the new building research centre in Ottawa and its dedication. Articles on building research in Australia and Sweden are also included.

UK Equipment for Canada

It has been the custom of the British Standards Institute/Canadian Standards Association Approvals Agency to supply lists of electrically-operated equipment manufactured in the UK and approved by the Canadian Standards Association with addresses of the makers of the equipment.

As the number has increased considerably over the last twelve months it has become impracticable for them to issue duplicated lists and the information has now been prepared in the form of a booklet, which also includes the names and addresses of the Canadian representatives.

This booklet contains the names of the manufacturers who obtained approval before March 31 last, and supplementary lists will be issued, at six-monthly intervals, September 1, and March 1, each year. Copies of the booklet and, when available, supplementary lists, can be obtained free of charge from the BSI/CSA Approvals Agency, 2, Park-street, London, W1. All telephone inquiries should be made to Mayfair 9000, Ext. 2.

BOOKS FOR BUILDERS

HOW TO ESTIMATE
By JOHN T. REA
The *new 11th edition* has been brought up to date to September, 1950, with tables giving cost increases for materials and labour for 1936-7, 1939 and 1944-50. Over 680 illustrations. *21s. net (by post 21s. 10d.)*

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The SCOTTISH BUILDER

Scottish Industries Exhibition

IN giving the background to the 1954 Scottish Industries Exhibition, which is to be held in the Kelvin Hall, Glasgow, from September 2-18 next, MR. R. A. MACLEAN, chairman of the Exhibition and of the Council of Management, at a Press conference on May 24, said that manufacturers in Scotland were producing traditional and new goods in large quantities, and they felt they were making them well. They wanted to sell these goods, and what was more natural than to join together in one vast selling campaign?

The first Scottish Industries Exhibition, he said, was held in 1949. It was attended by 30,000 buyers and over half a million trade and other visitors from all over the world. No British trade fair since the war had equalled these attendances. Business to the value of £10 million was done, of which approximately one half was export trade.

The magnitude of these results would, he hoped, make it clear that the 1949 Fair was of importance and value not only to the economy of Scotland but to that of the UK as a whole.

To run a successful exhibition, or trade fair, three things were necessary, he said. First, the support of industry; secondly, sufficient financial resources to launch a heavy financial programme before receiving anything in the way of revenue return; and thirdly, the support of trade buyers. Industry had supported the exhibition strongly. Within a few weeks of applications being invited, 50 per cent. more stand accommodation was asked for than was available, notwithstanding the fact that the Kelvin Hall, Glasgow, where the exhibition was being held, was one of the largest halls in Europe. The leading concerns in almost every Scottish industry would be there, supported by many medium and smaller firms; 100 industries would be represented, some industries having as many as half a dozen different manufacturers. The stand frontage was approximately 1½ miles in length. It was equivalent to a shop window stretching from Oxford-street down Charing Cross-road, along the full length of the Strand and Fleet-street to Ludgate Circus. Everything on show must be made in Scotland. The importance which the Council of Management had placed on new products, new fabrics and new designs, plus the fact that the competition for space had been considerable, ensured that not only would this be the greatest shop window of Scottish goods ever presented to buyers from home and overseas, but made it certain that the equipment and merchandise on show was of high merit.

Supporting the exhibition, MR. JAMES STUART, Secretary of State for Scotland, said it was almost unique in being an expression of the determination of the people of Scotland themselves to demonstrate their own skill at their own expense.

"Far from being subsidised by the Exchequer," he continued, "its outlays are guaranteed by Scotsmen and Scots firms, and we confidently expect that it will follow the example of its 1949 predecessor and show a surplus in its accounts.

"I am convinced that the Exhibition will have a quality which will make it well worth a visit. That, at any rate, was the experience of the many thousands who visited it in 1949. I am certain that it will be the experience of those who visit it this year."

New Construction System

A NEW SYSTEM of unit construction, which has been given the name "Uniflat," has been evolved by Mr. Sam Bunton, architect, of Glasgow. It is designed to meet the problem that large new housing areas are being constructed without simultaneous construction of essential services. One vitally important feature of the "Uniflat" system is that the standard shell unit can "double" as a school or other essential building until such time as normal additional buildings can be constructed to take the service. It is claimed for the system that the houses so used can then be converted into normal three-room house units, thus giving a community a flying start and eliminating the present problems which arise where housing is constructed far ahead of schools, medical and other facilities.

Preservation of Houses

KIRKCUDBRIGHT TOWN COUNCIL have been told that discussions have been held with the secretary of the Historic Buildings Council for Scotland, who had viewed sympathetically a proposal that the little whitewashed houses at Kirkcudbright Harbour be preserved. The houses are of historic and architectural value, and artists in the town are interested in converting them into a museum for the display of paintings, pottery, and weaving.

Space-Saving Criticised

STRONG CRITICISM of the Scottish Department of Health proposals for space-saving in house-building have been made by several Scottish local authorities.

Stirlingshire Public Health Committee, following an interview with the Department of Health, has agreed to adhere to a recent decision of the County Council not to accept space-saving economy in the building of houses, and Ayr County Council has made "the strongest possible protest" to the Department of Health against the proposals.

Giving his annual report to the Incorporation of the Guildry of Edinburgh, LORD DEAN OF GUILD, MR. J. R. WATHERSTON, asked: "Can we be complacent about the type of building approved by the Department of Health? While we realise the urge for these reduced standards we are not at all certain that the best course is being pursued."

They were particularly concerned, he said, about the reduced size of rooms and the type of construction of the internal walls between rooms which were so thin that they had little sound-deadening qualities.

"I notice with interest," continued Mr. Watherston, "that recently some councils in Scotland have declined to proceed with schemes of low-cost housing. One of our difficulties is that these reduced standards cut across our present building laws and building regulations, and we are still in the somewhat unfortunate position of having to agree, or at least acquiesce in things for which the Statutes have not been correspondingly amended.

"This is the position and we must hope for early amendment and clarification. We feel also that there is still too much tendency for the construction to be unduly flimsy. While the actual requirements of safety in so far as structural stability is concerned may be attained we feel that future maintenance charges will be much higher than they might otherwise be if more substantial construction was pursued in the first place."

The new model building by-laws really did make an effort, however, to bring reason into the world of building, added Mr. Watherston; the Court had given serious consideration to them, but so far had not seen fit to make a recommendation that they be adopted by Edinburgh Corporation. In the meantime they regarded them as a background code of practice to which reference was frequently made.

The value of building work submitted to Edinburgh Dean of Guild Court last year was a record. Compared with £6,849,880 the previous year, the figure was £6,924,980.

Atomic Energy Project

Preparatory work on the Dounreay Atomic Energy project has been done by representatives of the Atomic Energy Department and other allied bodies in consultation with Caithness County Council and Thurso Town Council. These private discussions have confirmed that Thurso will be the residential centre for atomic work in Caithness. Some 200 houses will be built to house labour which will come to the area. First 100 will be completed by January, 1957, while a hostel to cater for 100 single workers will also be constructed by that date. Some 600 workers are visualised as being involved in the project and housing, schools and other facilities will be required. This will allow Thurso and Caithness County to make a start with the housing plans.

House Restoration

THE CARNEGIE DUNFERMLINE TRUST are investigating the possibility of restoring the interior of Abbots House, the town's oldest inhabited house, to as near its original state as possible. The house dates from the early sixteenth century.

NEW BUILDINGS

Argyllshire.—CC to have plans prepared for a new school which is to be erected on an Isle of Islay site. The architect is William R. Tocher (F), and the quantity surveyor D. B. MacFarlane Johnstone, County Council Offices, Old Cowal Hotel-bldgs., Victoria Promenade, Dunoon.

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SCOTTISH BUILDING TRADE WAGES

FOLLOWING are rates of wages authorised by the Scottish National Joint Council as from May 24, 1954. They apply to the whole of Scotland, including the islands of Orkney, Shetland, etc.

Grade A: Craftsmen, 3s. 9d.; Labourers, 3s. 3½d.

For apprentices, the rates are:

Year.	Percentage of Craftsman's rate.	For week of 44 hours. s.	d.
1st	25	41	3
2nd	33½	55	0
3rd	50	82	6
4th	66½	110	0
5th	75	123	9

For female labour, the rates are:

	s.	d.
Operatives on craft operations (at end of probationary period)	3	3½
Operatives on labouring operations (at end of probationary period)	3	0

Glasgow.—Plans prepared and approved for Beattie's Bakeries, Ltd., Paton-st., Dennistoun, for alterations and additions at their Weslyen Bakery, Gallowgate. The architects are John Keppie & Henderson and J. L. Gleave (F&A), 196, West Regent-st., Glasgow.

Glasgow.—Plans prepared and approved for The House of Fraser, Ltd., Buchanan-st., for alterations and additions at 160-186, Cowcaddens-st., Glasgow.

Glasgow.—Plans prepared and approved for A. & D. Fraser, Ltd., Springkell-ave., Fotheringill-rd., for reconstruction, alterations and additions at Springkell-ave., for which the architects are Launcelot H. Ross & Lindsay (F&A), 29, West Regent-st., Glasgow.

Glasgow.—Plans prepared and approved for James Houston & Sons, Ltd., Gallowgate, Calton, for alterations and additions at 461-471, Gallowgate. The architect is W. Murdoch MacMenan, 8, India-st., Charing Cross, Glasgow.

Glasgow.—Plans prepared and approved for Watson & MacLean, Ltd., Govan, for new extensions, alterations and additions to be erected at Harmony-row, Govan-rd. The architects are James Taylor Thomson, MacCrae & Saunders (F&A), 216, Bath-st., Glasgow.

Glasgow.—Plans prepared and approved for Matthew White & Co., Ltd., Washington-st., for alterations and additions to be carried out at Anderston, for which the architect is Mangus Duncan (F), 243, Eglinton-st., Eglinton Toll, Glasgow.

Glasgow.—Plans prepared and approved for A. & J. Gelfer, Ltd., Swanston-st., for alterations and additions at 109-135, French-st., Bridgeton. The architect is R. J. Carruthers (F), 163, Broomhill-dr., Dumbarton-rd., Partick, Glasgow.

Glasgow.—Plans prepared and approved for extensions and additions for the Archdiocese of Glasgow at St. Simon's at Partick Bridge-st. The architect is Thomas S. Cordiner (A), 256, West George-st., Glasgow.

Glasgow.—Plans prepared and approved for H. Samuel, Ltd., Hunter's-rd. Works, Rockley, Birmingham, for alterations and additions at Union-st. The architects are Blyth & Blyth (F), 135, George-st., Edinburgh.

Glasgow.—Plans in hand for Alexander Sloan & Co., Ltd., for new commercial garage to be erected at South Portland-st. and Carlton-ct., Gorbals. The architects are North & Partners, 40, Broadway, Maidenhead, Berkshire.

Hamilton.—Lanarkshire CC to have plans prepared for new Protestant prim. sec. sch. of 28 rooms, gymnasium and two halls. The architect is William Watt (F), County Offices, Albert-st., Motherwell-Wishaw.

Lanarkshire.—Plans prepared and approved for new block (staff accommodation) for the Scottish Industrial Estates, Ltd., which is to be erected at the Queenslie estate, for which the architects are George, Boswell, Mitchell & Johnstone (F&A), 256, West George-st., Glasgow.

Lanarkshire.—Plans in hand for new warehouse for the Blantyre Co-operative Society, Ltd., Herbertson-st., to be erected at Glasgow-rd., Blantyre. The architect is Kenneth F. Masson (F), Scottish Wholesale Co-operative Offices, Paisley-rd., Kinning Park, Glasgow.

Lanarkshire.—Plans in hand for new development of the Mains housing scheme of East Kilbride, consisting of 395 houses, for which the architect is Frank Scott (F), Terrence House, East Kilbride.

Stewartry.—CC to build 50 traditional houses at a total cost of £71,293, an average of £1,426 per house. In addition, a new "austerity" secondary school is to be built at Dalbeattie at a cost of £121,920, and £8,560 is to be spent on improvements at Twynholm Primary School.

Stirling.—Plans prepared and approved for 52 houses to be erected at the Berestone housing site, for which the architect is J. Austin Bent (A), 15, Palmerston-pl., Edinburgh.

Sutherland.—CC to consider a scheme to build a £32,000 bridge to replace Hope Bridge, on the Tongue-Durness road. The scheme would be 100 per cent. grant-earning.

The Builder FUTURE CONSTRUCTION

Full details of Public Appointments open will be found in the Advertisement pages of this and previous issues.

CONTRACTS OPEN

For some contracts still open but not included in this list see previous issues. Those with an asterisk are advertised in this number. The dates at the heads of paragraphs are those for the submission of tenders; a dagger (†) denotes closing date for applications; the name and address at the end refer to the person from whom particulars may be obtained.

BUILDING

MAY 31.

*†**Stourbridge BC.**—48 flats at Norton estate. BE&S. Dep. £3 3s.

*†**Winchester City C.**—16 old folk's bungalows, Weeke Manor estate. A. S. Wilson & Ptnrs., quantity surveyors, 8, Storey's-gate, Westminster, SW1. Dep. £2 2s.

JUNE 2.

*†**Cardiff RDC.**—25 flats and four shops at Eglwys Wen estate. Bryan H. Williams, C to Council, 20, Park-pl. Dep. £10 10s.

JUNE 3.

*†**Plymouth City C.**—(a) 23 houses and 16 flats at Manadon Vale; (b) 24 houses at Chaucer-way. City A. Dep. £3 3s.

JUNE 4.

*†**Somerset CC.**—Workshops, Yeovil municipal college. R. O. Harris (F.), County A, Taunton. Dep. £2 2s.

JUNE 7.

*†**Gloucestershire CC.**—Secondary modern school, Bishops Cleeve. County A., Gloucester. Dep. £2 2s.

*†**Southampton CBC.**—26 houses at Weston Farm. BE. Dep. £1.

JUNE 8.

*†**Hendon BC.**—Two houses and two bungalows. BE&S. Dep. £2 2s.

*†**Hendon BC.**—Six dwellings, Highfield-rd., Golders Green, NW11. BE&S. Dep. £2 2s.

*†**Hornsey BC.**—34 flats at Boyton-rd., N8. BE&S. Tenders by July 5.

*†**Northants CC.**—Extensions, etc., Rockingham-rd. modern school, Kettering. County A, Northampton.

JUNE 9.

*†**Hampstead BC.**—Ten flats at Nos. 42-44, Galsworthy-rd., NW2. TC.

*†**Portsmouth City C.**—(a) 92 houses at Bondfields-lawn; (b) 78 houses at Bondfieldslawn; and (c) 6 shops and maisonettes at Barncroft. City A. Dep. £1 each contract.

*†**Rugby BC.**—40 garages, Overslade estate. BS. Dep. £2 2s.

*†**Rugby BC.**—Concrete covering to calf pens, Cattle Market. BS. Dep. £2 2s.

*†**Swansea CBC.**—Primary school; Forest Hall. Boro' A. Dep. £5.

JUNE 10.

*†**Wilts CC.**—Secondary modern school at Highworth, near Swindon. County A, Trowbridge.

JUNE 11.

*†**Durham CC.**—Child welfare centre and school clinic in West View area, Hartlepool. County A.

*†**Sheffield City.**—148 dwellings (four contracts). J. L. Womersley (A), City A. Dep. £2 each.

*†**West Riding Standing Jt. Com.**—Police premises at 17 different sites. County A, Wakefield. Dep. £2 2s.

JUNE 12.

*†**Reading CBC.**—20 garages on Park Farm estate. Boro' A.

*†**Romford Group Hospital Management Committee.**—Reinstatement of ward block, St. George's Hospital, Hornchurch. Evans, Thompson & Whitehead, consulting architects, 5, High-st., Romford. Dep. £2. Tenders by July 3.

JUNE 14.

Newark (Notts) RDC.—14 houses, Farndon, and six houses, Coddington. W. Saunders & Partners, architect, 24, Castle Gate, Newark.

JUNE 16.

*†**Huntingdon RDC.**—Four bungalows at Alconbury Weston. K. A. Milner, LRIBA, 4, Market Hill, Huntingdon. Dep. £2 2s.

*†**Merthyr Tydfil CBC.**—Infants' school at Gellideg. BE&S. Dep. £3 3s.

JUNE 19.

Wantage RDC.—Erection of eight houses at Hermitage. S., Council Offices, Belmont, Wantage. Dep. £2 2s.

JUNE 22.

*†**Selby UDC.**—24 houses at Stainer Wood estate. Blenkinsopp & Thompson, AF.RIBA, Clifton-chbrs., Park-st. Dep. £2 2s.

JUNE 23.

*†**Doncaster CBC.**—Six shops and six flats at Weston-rd. Boro' A. Dep. £2 2s.

JUNE 24.

*†**Worcester City.**—Eight maisonettes and 8 flats and 6 shops and 6 maisonettes, Dines Green estate. City E, 22, Bridge-st. Dep. £2 2s.

JUNE 25.

*†**Bournemouth CBC.**—Taximan's shelter adjoining Information Bureau, Westover-rd. Boro' A. Dep. £1 1s.

JUNE 28.

*†**Bushey UDC.**—24 flats and 30 houses at Ashfield-ave. E&S. Dep. £3 3s.

*†**West Riding of Yorks.**—Satellite clinic in Highfield-rd., Hansworth. County A, Wakefield. Dep. £2 2s.

JULY 5.

*†**Maidenhead BC.**—Six shops with maisonettes over at Pinkneys estate. BE&S. Dep. £2 2s.

JULY 6.

*†**Greenwich BC.**—34 flats. BE&S. Dep. £2 2s.

JULY 7.

*†**Alton RDC.**—Public convenience at Grayshott. E. Dep. £3 3s.

JULY 9.

*†**Salford City C.**—Eight shops, 14 flats and 8 maisonettes in Bury-st. City E&S. Dep. £3 3s.

NO DATE.

*†**Gosport BC.**—Reconstruction of Thorngate Hall. BE. Dep. £2 2s.

PAINTING, ELECTRIC LIGHTING, MATERIALS, ETC.

MAY 31.

*†**Halifax CBC.**—Various items for 72 flats and 66 houses at Mixenden. BE.

JUNE 4.

*†**Birmingham City C.**—Water and heating installations for contract No. 297, doctor's house; contract No. 307, six shops and six maisonettes. City E&S, Dep. £2 2s. Tenders by June 30.

JUNE 5.

*†**Kingston-upon-Thames BC.**—External redecoration of Guildhall and Market House. BS. Dep. £2 2s. each.

JUNE 8.

*†**Mitcham BC.**—External painting of multi-storey flats and maisonettes in three contracts. BE&S. Tenders by June 26.

JUNE 10.

Merton and Morden UDC.—About 4,800 lin. yds. WI railings. H. May, C of Council.

*†**Widnes BC.**—Fencing and gates for 68 dwellings. Boro' A. Dep. £1 1s.

JUNE 14.

*†**Bootle CBC.**—Plastering to nine maisonettes and eight shops, Copy-la. estate site. BS.

*†**St. John's and Manor House Hosp. Management Com.**—Redecoration and adaptation to main kitchen. Secretary to Com., St. John's Hosp., Stone, near Aylesbury.

*†**Staffs CC.**—Rolling doors for Streethay Highway depot. T. H. Evans, Clerk, Stafford.

*†**Twickenham BC.**—Painting and decorating of school buildings. BE. Dep. £2 2s.

JUNE 18.

*†**Sheffield City C.**—Heating and hot water services at Silverdale secondary modern school. T.C. Dep. £2.

*†**Southport CBC.**—Exterior painting of houses in six contracts. Boro' A. Dep. £1 1s.

JUNE 21.

*†**Dover BC.**—External painting, etc., to 203 flats and houses in Bead-st., Adrian-st. and on Astor-ave. estate. B.E. Dep. £2 2s.

*†**Durham CC.**—Central heating system and steam boiler at Heath House hostel, Houghton-le-Spring. County A, Durham.

NO DATE.

*†**Eastern Electricity Bd. (Fens Sub-Area).**—Painting street-lighting columns. Manager, Albert Meadow, Peterborough.

ROADS, SEWERAGE AND WATER WORKS

MAY 31.

Coseley UDC.—Making-up of Kenelin-rd. Joseph C. Roper, C of Council. Dep. £2 2s.

JUNE 10.

St. Neots RDC.—About 3,000 yds. sewers, sewage disposal works, etc., at Buckden. Pick, Everard, Keay & Gimson, engineers, 6, Millstone-la., Leicester. Dep. £2 2s.

†**Winchester City C.**—Burning-off and asphalt resurfacing of various roads. City E. Dep. £2.

JUNE 11.

Grimsby RDC.—Construction of sewage pumping station, laying of sewers and extensions to existing sewage disposal works. John H. Haiste & Partners, engineers, 4, Queen-sq., Woodhouse-la., Leeds, 2.

JUNE 12.

West Riding of Yorks CC.—Redecking of Monk Fryston railway bridge. County E&S, Wakefield. Dep. £1.

Whitehaven TC.—Sandwith pumping main and 15-in. dia. main from Lanehead to Ladysmith-la. Rofe & Raffety, 3, Victoria-st., Westminster, London, SW1. Dep. £2 2s.

JUNE 14.

Bucks CC.—Widening of about 1,000 yds. of Loudwater/Maidenhead-rd, A. 4094. County S, Aylesbury. Dep. £2.

Luton BC.—Highways resurfacing of several roads. BE. Dep. £2 2s.

JUNE 16.

*Huntingdon RDC.—Site works at Great Stukeley. K. A. Milner, LRIBA, 4, Market-hill. Dep. £2 2s.

JUNE 30.

St. Asaph RDC.—Water supply to the parishes of Cwm, Tremeirchion, Waen and Bodfari—contract No. 2. Charles J. Lomax & Son, civil engineers, 37, Cross-st., Manchester, 2. Dep. £5 5s.

GENERAL BUILDING WORK

(LONDON)

Battersea.—FLATS.—Hsg. Com. have provisionally approved a scheme for the permanent development by the erection of 56 flats of the sites of five prefabricated bungalows in Latchmere-st. and adjoining land. MH&LG has agreed to the removal of the bungalows, and the total cost of the scheme is provisionally estimated at £160,000.

Beckenham.—FLATS AND MAISONETTES.—BC propose the erection of 172 flats and maisonettes on sites at Chulsa and Border-cres. near the Crystal Palace at an estimated cost of over £250,000. Amenities will include a communal hall and 18 lock-up garages. Contractors are expected to be selected this summer.

Brentford and Chiswick.—SHOPS AND OFFICES.—Proposals have been made by CC Estates and Hsg. Com. recommending that the site of the "Three Pigeons" PH be used for the erection of shops and offices as part of the High-st. interim improvement scheme.

Eltham.—BUS GARAGE.—London Transport Executive have applied to the LCC for approval for a proposal to build a bus garage at Sherard-rd. The site, near Well Hall railway station, is at present being used as allotments. LTE's Offices, 55, Broadway, SW1.

Haymarket.—THEATRE MODERNISATION.—Licences have been obtained by the owner, H. H. Wingate, for the interior modernisation of the Comedy Theatre, Panton-st., at an estimated cost of nearly £50,000. A start will be made in June, and the scheme includes new seating, alterations and extensions to the auditorium, new heating installations, modernisation of stage and dressing-rooms and a new scene dock. The architects are Cecil Masey, FRIBA, 6, Stanley Park-rd., Wallington, Surrey, and Alister MacDonald, FRIBA, 10-13, Bedford-st., WC2; and the work is expected to take nine months to complete.

Holborn.—LOAN SANCTION.—MBC is recommended to make application to MH&LG for loan consent to the borrowing of £40,300 for the erection of 14 flats as an extension to Tybald's-close. Oswald Parratt, FRICS, Adelaide House, London Bridge, EC4, is quantity surveyor, and W. V. Zinn, MConsE, 172, Buckingham Palace-rd., SW1, the consulting E for the scheme.

Lambeth.—FLATS.—Hsg. Com. have approved proposals for the erection of 40 flats on 1.32 acres of land known as site No. 32 at Tulse Hill, in three blocks, at an estimated cost of £82,000.

Leyton.—FLATS.—Six flats are to be built by Wanstead-Woodford Council on the side of No. 180-186, High-rd., Salway Hill.

Paddington.—PERMANENT DEVELOPMENT.—TP Com. have authorised the submission to the LCC of Stage 1 (site) planning applications in respect of development of the following five temporary house sites: Nos. 10-18 (even), Aldridge-rd. Villas (Site No. 1); Nos. 6-12 (even), Edbrooke-rd. (Site No. 45); Nos. 169-175 (odd), Kilburn Park-rd. (Site No. 9); Nos. 1-7 (odd), St. Luke's-rd. (Site No. 33); and Nos. 29-39 (odd), Warlock-rd. (Site No. 38).

Stoke Newington.—FLATS.—LCC have granted permission to proposals by MBC for the stage 2 erection

of three seven-storey blocks and a four-storey block of flats on the site of Nos. 97-145, Bethune-rd.

Stoke Newington.—DWELLINGS—MBC are to invite tenders in the near future for the erection of a total of 144 dwellings comprising 72 flats on the Manor-rd. extension site; 22 dwellings on the Sandbrook-rd./Harcombe-rd. site; 36 flats on the Albion-rd./Clissold-cres. site; and 14 flats on the site of 56, Queen Elizabeth's-walk.

Uxbridge.—FARM IMPROVEMENTS.—CC have been recommended to approve proposals by Estates and Hsg. Com. for the improvement of farm buildings at Knightscote Farm, Harefield, and the replacement of the derelict farmhouse by a new building.

Westminster.—LOAN SANCTION.—MH and LG have sanctioned the borrowing by City C of £120,525 in respect of the erection of a block of flats on the site of Nos. 41-43, Ebury Bridge-rd.; also the borrowing of £618,840 for the erection of six blocks of flats at Churchill-gdns., section 2.

Westminster.—LAYOUT SCHEME.—Hsg. Com. recommend the approval by City C of revised proposals by Powell & Moya, AA.RIBA, 36, Gt. Smith-st., SW1, of the layout of section 3 of Churchill-gdns., and their submission to the LCC for stage 3 TP approval. The revised layout proposes the inclusion of a square in the centre of the estate; the incorporation of a nursery school on the ground floor of block No. 33 instead of the reservation of a site for the erection of such a school; the incorporation of two doctors' surgeries and public conveniences in block No. 38, and erection of about 40 lock-up garages.

(PROVINCIAL)

Accrington.—East Lancs TA Forces Assoc. propose erection of permanent headquarters at Ellisons Tenement.

Accrington.—PC Council of Christ Church (Rev. J. Wenter) propose improvements to church and sch., £14,000 est.

Barrow-in-Furness.—BC approved revised layout for 121 dwellings at Margate-st. site.

Bedlington (Northumberland).—Bedlington "A" Pit Combined Levy Com. obtained site at Bedlington Station on which to build club premises, costing £20,000. Proposal still in early stages.

Bedlington.—New factory to be built for Kerna Gloves, Ltd., with floor space of about 10,000 sq. ft. Architect, J. M. Angus, Lovaine-pl., Newcastle-on-Tyne.

Bingley.—UDC propose extensions to kitchen and solarium at Princess Hall.

Blackpool.—EC seek Min. approval for following schs:—New RC girls' mod.; completion of Highfield sec. mod.; second half of Hawes Side; RC prim. to north of borough; new inf. at Bispham; and new jun. and inf. mixed on Grange Park estate.

Blyth.—Northern (N & C) Coal Brd. to erect screening plant at Isabella Colliery.—TC to allocate contracts for another 40 houses among local builders.

Bolton.—EC to invite tenders from selected contractors for erection of Smithills cty. sec. sch., and new assembly block at Great Lever cty. sec. sch.—Received approval for adaptations and erection of classroom block at Thomasson Memorial sch., £33,043 est.

Bootle.—BC to negotiate contract with direct labour dept. for erection of 74 dwellings at Boston-st. site, and with Geo. Wimpey & Co., Ltd., London, for erection of 106 dwellings at Netherton estate.

Bradford.—TC approved layout for 720 dwellings at Halifax-rd. estate.

Burnham.—Amended plans for the development of Alamein-rd. site adopted by UDC, Council's Architect, Stanley Bragg, ARIBA, to go to selective tender:—UDC to build four houses in Glendale-rd.; five units in Dunkirk-rd.; and four units and 16 houses to the north of Normandy-ave.

Burnley.—BC to negotiate contract with direct labour dept. for 53 dwellings at Far Brumshaw estate.

Cambs.—CC to erect assize and magisterial courts, council offices for CC and Chesterton and South Cambs RDCs, and county library at est. cost about £300,000 on Norman Castle Mound, Cambridge. Scheme prepared by Sir William Holford, FRIBA, 5, Cambridge-ter., NW1.

Clay Cross (Derbys).—UDC approved plans for conversion of High-st. premises of Capt. A. Bennett, into new departmental store, for F. W. Woolworth, Ltd.

Colwyn Bay.—TC to invite tenders shortly for erection of crematorium, at Bron-y-Nant.

Coventry.—TC appointed J. E. C. Powell, 8, Queen's-rd., as quantity surveyor for erection of flatlets and block of three-storey "Unity" flats at Charter-ave. Hostel site. Tender to be obtained from direct labour dept. for latter scheme.

Crook (Co. Durham).—UDC plan bus stn. with underground parking places in New-rd., Crook.

Daventry.—MoW propose erection of offices for Min. of Labour and Min. of Pensions and National Insurance at New-st.

Daventry.—RDC approved scheme for modernisation of pre-war houses at Dolls Hill, Byfield and Woodford Halse.

Derby.—EC approved estimate of £138,000 for erection of Humbleton sec. mod. sch.

Dudley.—BC to negotiate contract with Eadie & Co. (Wolverhampton), Ltd., 29, Waterloo-rd., Wolverhampton, for 206 houses at Saltwells estate.

Durham.—CC to build nine more police houses. Plans by Cty. S. G. R. Clayton, Court-la., Durham.

Gateshead.—Arthur & Kirkup, Swinburne-st., architects for four pairs of houses proposed to be built at Chowdene Bank.

Gateshead.—Northern Gen. Transport Co., Bensham, to spend £400,000 on new buildings during the next two or three years to include extension of garage at Chester-le-Street, new garage at Winlaton, a garage and bus stn. at Sunderland, and extensions at Percy Main, Stanley and Murton garages. Also £300,000 is to be spent on new buses.

Gosport.—Hsg. Com. recommend re-siting of proposed PH to a site on junction Wych-la./Brewers-la. to enable BC to develop junction Nobes-ave./Brewers-la. with further houses.

Halesowen.—PC Council of St. Peters (Rev. D. J. Williams) propose erection of church at Lapal, £30,000 est.

Hazel Grove.—Vessey, Ltd., Marple, are in negotiation with UDC for development of Newtown-st. Housing site.

Heanor.—UDC approved plans for erection of sec. sch. at Aldercer, for Derbyshire CC.

Hexham.—UDC approved plans for service and petrol filling stn. at West-rd., for J. A. Bowman (Hexham), Ltd.

Keighley.—TC to prepare preliminary plans for erection of Salvation Army hostel.

Keighley.—Jays Furnishing Stores, Ltd., propose reconstruction of their premises.

Lancs.—Essrow Cinemas, Ltd., to rebuild the Mayfair, Besses o' th' Barn, Lancs. Building licence granted, and architects are Drury and Gomersall, Manchester. Managing director of Essrow Cinemas, Ltd., is H. Woolf.

Leamington Spa.—BC appointed C. F. Redgrave & Partners, 6, The Quadrant, Warwick-rd., Coventry, as architects for five aged persons' dwellings, eight houses and block of four-storey flats at Cinema Site, Kingsway.—Approved amended layout for 259 houses at Lillington estate.

Leigh.—Coal Industry Social Welfare Organisation propose construction of miners' recreation centre at Twist-la.

Lymm.—Mellways, Ltd., Altrincham, propose erection of 127 houses at Higher-la. Architect, H. Hankinson, 3, The Downs, Altrincham. (Inquiry held.)

Macclesfield.—Cheshire CC propose extensions to cty. gram. sch. in 1954/5 programme, which include new classrooms and new gymnasium, £50,000 est.

Manchester.—TC to prepare plans and estimate for erection of maternity and child welfare centre at Hall-la. Centre.

Market Drayton.—UDC approved erection of further 22 houses at Salisbury Hill View estate.

Middlesbrough.—Extensions and alterations to be made to Middlesbrough Hospital. Plans by P. H. Knighton, "Dunira," Osborne-rd., Newcastle-on-Tyne.

Middlesbrough.—Corp. Catering Com. approved draft plans by BE, J. A. Kenyon, for converting Trinity Hall into civic restaurant.

Morpeth.—TC to consider estimates for construction of grandstand at Grange House Field. BE, F. K. Perkins.

Morpeth.—TC to build another 78 houses. F. K. Perkins, BE.

Newcastle-on-Tyne.—Stephenson & Gillis, Savillechbrs., North-st., architects for tailoring premises in High-st., Paisley, Scotland, for Jackson the Tailor, Ltd.—Extensions and alterations to be made to General Hospital. Architect, P. H. Knighton, "Dunira," Osborne-rd.—MH approved in principle £30,000 scheme for improvements, including provision of ophthalmic operating dept. at Newcastle Eye Infirmary, for Newcastle Hospital Brd. Board's Chief A, P. H. Knighton, MBE. ARIBA.

Newcastle-on-Tyne.—Plans by City A, 18, Clothmarket, for converting "Hermiston," Jesmond Park West, into old people's home, for City Welfare Com. approved.—Passmill, Ltd., paper converters, Lime-st., Newcastle, to extend their factory and have prepared their own plans.—CWS Architects' Dept., 90, Westmorland-rd., prepared plans for shops and warehouses in Benton-rd. and Benton Park-rd.—Reg. Hospital Brd., "Dunira," Osborne-rd., plan plastic surgery unit at Fleming Children's Hospital.

Newton Aycliffe.—Scheme under way by Middlesbrough and Darlington Methodist Dist. Synod to build new church at Newton Aycliffe, est. cost £45,000. Rev. Arthur Simmons, Darlington, is in charge of scheme.

Northampton.—BC appointed Edward A. Pearce & Partners, 28, Baker-st., W1, as consulting engineers, and E. Howard & Son, 20, Deangate, as quantity surveyors, for reconstruction work at public baths, £26,329 est.

Northants.—CC seek approval for inclusion of following in 1955 programme:—Prim. schs. at Western Favel, Towcester; first instalment of RC at Corby; new prim. at Grange estate, Kettering; prim. at Croyland Farm estate, Wellingborough; new sec. mod. at Guilsborough; new gymnasium at Blackley at Magdalen College; extensions at Towcester cty. mod.; completion of new buildings at Kettering gram.; and sec. mod. at Desborough.

North Riding.—EC appointed Stinton, Jones & Partners, 21, Gloucester-pl., London, W1, to be mechanical and electrical engineering consultants for Cleveland Tech. College.

Northumberland.—CC proposes child welfare centre at Berwick. C. C. Brown, County Hall, Newcastle-on-Tyne, Cty. A.

Rochdale.—BC propose further 78 dwellings at Kirkholt estate.

Rowley Regis.—TC propose erection of shops at Brickhouse Farm estate.

Runcorn.—UDC approved plans, new gasholder at Castner Kellner Works, and new drawing office off South-parade, Weston Point, for ICI, Ltd.

Salford.—TC propose erection of eight-storey flats on part of Liverpool-st. site. £200,000 est. Plans by City E, G. A. McWilliams.—TC appointed Wilfrid Thorpe and H. Hirst Smith, Barton Arcade, Deansgate, Manchester, and Cruickshank & Seward, 196, Deansgate, Manchester, as architects for new housing scheme.

Sedgefield.—RDC to let contracts for erection of 37 houses at Trimdon Colliery, six shops and flats at West Cornforth, and 10 shops and 10 flats at Trimdon Village.

Spennymoor.—Min. inquiry held into UDC's proposed compulsory purchase orders at Byers Green, where it is proposed to demolish 150 houses as part of reconstruction scheme.

Stafford.—TC approved erection of multi-storey flats or maisonettes on Manor estate, £225,000 est.

Staffs.—EC propose following schs. in 1955/6 programme:—Prim. at Burton Manor, Stafford, £44,968 est.; Galley's Bank, Kidsgrove, £44,968 est.; Haregate estate, Leek, £44,968 est.; sec. at Gnosall, £88,600 est.; Uttoxeter, £94,200 est.; Hixon, £94,200 est.; extensions to Westwood Hall, Leek, £20,000 est.—The following in Newcastle Excepted District:—Prim. at Clayton (second instalment), £40,140 est.; Wolstanton RC, £44,968 est.; Knutton, £44,968 est.; Bradwell, £44,968 est.; second instalment of Chesterton sec. mod., £99,000 est.—Special day sch. for handicapped children on existing foundations at Blackfriars, Newcastle, £12,000 est.

Stockport.—BC approved plans, rebuilding of "Old Ram's Head," Higher Hillgate, for Willsons Brewery, Ltd.; four shops with offices above adjacent to Super Cinema, for Stockport Palace, Ltd.

Stoke-on-Trent.—TC approved erection of 38 houses at Belgrave-rd. and Lightwood-rd., Longton.

Stoke-on-Trent.—Methodist Church propose erection of Church at Park-la. estate, Biddulph, £40,000 est.

Sunderland.—TC authorised Boro' A, H. C. Bishop, Grange House, Stockton-rd., to negotiate prices with local builders for erection of further houses at Grindon.—TC received loan sanction for following:—£84,910 for proposed Broadway cty. jun. sch.; £156,236 for 32 houses, 78 flats and 31 garages at Grindon Village; £191,318 for 153 houses at Grindon Village.—Newrick & Blackbell, John-st., prepared plans for church hall in Roker Park-rd.—Boro' A. prepared layout plan for phase two of Farringdon development plan.—Newrick & Blackbell, John-st., architects for extensions in Borough-rd., for Northern Autoport, Ltd., and warehouse and garage in King-st. for R. L. Charman, Ltd.—G. E. Charlewood, 14, Neville-st., Newcastle-on-Tyne, prepared plans for garage at Millfield, for Craven Dairies, Ltd.—Plans being prepared by J. W. Taylor & Son, St. James-bldgs., Gallowgate, Newcastle, for presbytery on Hylton Castle estate, for Rev. P. Smyth.—Hunter & Son, Ltd., to erect garage in Crosslea-ave., to plans by G. T. Brown & Son, Fawcett-st., Sunderland.

Sunderland.—TC approved plans for building of hostel on Pennywell estate for old people. Plans by Boro' A, H. Bishop, Grange House, Stockton-rd.

Sunderland.—RDC to negotiate for five acres of land at East Herrington, for erection of 60 council houses. S. C. Emmerson, RDC Offices, The Esplanade.

Swansea.—Committee of trades, under chairmanship Mr. L. W. Goddard-Jones, to form limited company for erection per 34 perimeter shops round Swansea Market. Plans prepared by Clifford Vaughan and Ridgewell, architects, 1, St. James-gdns., Swansea. Comm.'s secretary, Anthony Hughes.

Thirsk.—RDC to let contract for erection of 18 houses and eight flats at Topcliffe. Architects, Needham, Thorp & White, 6, High Petergate, York.

Thornaby-on-Tees.—TC to build three shops on Lanehouse-rd. estate. Plans by BE, Town Hall.

Tottington.—UDC propose erection of 14 self-contained bungalows for aged at Leemans Hill.

Warwickshire.—CC agreed in principle to provision of new council chamber at estimated cost £60,000. Application to be made for project to be included in Ministry's capital expenditure programme for 1955-56.

Whitehaven.—Min. consented to TC going ahead with new civic hall, est. cost £160,000. Work must be spread over two to three years. Plans include theatre to seat 1,000, restaurant and lecture room in Lowther-st.

Worcs.—EC approved sketch plans for following

DOHM
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schools:—Bromsgrove high, £200,000 est. Architects, Yorke, Rosenberg & Mardall, 2, Hyde Park-pl., London, W2. Wythall sec., £124,000 est. Architect, S. T. Walker, 83, Suffolk-st., Birmingham. Extensions at Redditch high, £145,300 est. Cty. A, H. C. Lomas.

TENDERS

* Denotes *accepted*.
† Denotes *provisionally accepted*.
‡ Denotes *recommended for acceptance*.
§ Denotes *accepted subject to modification*.
‖ Denotes *accepted by H.M. Government Departments*.

Andover.—Alterations and additions to ablutions at RAF Station, Amport, Andover, Hants: *Beric, Ltd., 131, Bargates, Christchurch, Hants.

Barrow-in-Furness.—25 houses on first section of Abbotsmead estate, for BC: *Direct Labour. Rebuilding of public baths: *F. Parkinson, Ltd., Blackpool, £19,298.

Battersea.—Erection of seven shops, bank premises, 13 flats and eight maisonettes on Lavender-hill, for BC: *Direct Labour, £74,669.

Birmingham.—268 dwellings at Staplehall Farm estate, for City C. City A, A. G. Sheppard Fidler, MA, BArch, FRIBA, AMTPI: *Wates, Ltd., London-rd., Norbury, £516,569. Tamworth.—150 houses at Hockley housing site, for RDC. Surveyor, A. Shaw, MIMunE, MRSanI: *Wates, Ltd., London-rd., Norbury, £183,119. Cheltenham.—64 houses at Bishop Cleave housing site, for RDC. Chartered Architects to the Council, Rainger, Rogers & Smithson: *Wates, Ltd., London-rd., Norbury, £83,023. Camberwell.—12 flats and 55 garages at the Denmark Hill site, for BC. BE&S, J. Clapp, BSc, AMICE, MIMunE, AMTPI: *Wates, Ltd., London-rd., Norbury, £36,629.

Bootle.—Dwellings at Netherton estate, for BC: *Holland & Hannen and Cubitts, Ltd., St. Mary's-rd., Liverpool 19, £148,390 (106); *S. Byron, 9, Greyburn-rd., Formby, £94,761 (73); 20 flats at Rimorse-rd., six houses at Pembroke-rd., six at Park-la., 10 at Pearson-dr., two at Malta-rd. and two at Southport-rd.: *Direct Labour, £22,870, £14,117, £11,534, £14,026, £2,963 and £3,028.

Burnley.—Extensions and adaptations to Whiteacres as a hostel for aged, for BC: *Pearce & Norquoy, Ltd., £13,713.

Bury.—Houses at Redvales estate, for TC: *J. E. France, Ltd., Orleans Works, Peel-st., Collyhurst, Manchester, £32,476 (32); *E. F. Davis, Ltd., Farnworth, £63,600 (64).

Chester.—Erection of 142 houses at Blacon, for City C: *Thomas Warrington & Sons, Ltd., £167,884.

Cramlington (Northumberland).—Erection of district offices for the Northern (N. & C.) Coal Brd. Architects, Marshall & Tweedy, 36, Blackett-st., Newcastle-on-Tyne: *Wesley H. Oliver, Ltd., Shields-rd., Newcastle-on-Tyne.

Dalton.—12 houses at Ireleth estate, for UDC: *Thos. Armstrong, Ltd., South-st., Cockermouth, £16,745.

Dartmouth.—Erection of 860-ft. wide dam in the River Avon at Dartmouth, for the South Devon Water Brd.: *Tarmac, Ltd., Ettingshall.

Derby.—Erection of Humbleton No. 2 sec. mod. sch., for EC: *Direct Labour, £124,117. Erection of six shops and six flats at Drayton-rd., Mackworth estate, for TC. Also two shops and two flats at Enfield-rd., Mackworth estate: *Vic Hallam (Contractors), Ltd., Valley Works, Langley Mill, £18,766 and £6,720.

Devonport.—Erection of Methodist Welcome Institute and Sunday Schools for the Trustees of the Methodist Central Hall, Devonport. Architect, Victor C. L. Saunders, ARIBA, 1, Sussex-st., Plymouth. Quantity surveyors, Langdon & Every, 11, Princess-sq., Plymouth: *A. N. Coles (Contractors), Ltd., Sutton-rd., Plymouth.

Dundee.—Erection of 430 houses at Angus & Douglas housing sites, for Corp. Mr. D. Dron (F), Council A, and J. A. F. Morrison, FRICS, quantity surveyor, Municipal-bldgs., City-sq., Dundee: *The Scottish Construction Co., Ltd., and James Miller & Partners, Ltd., Mauchland-st., Glasgow, and Athol Houses, Ltd., Barfillan-dr., Paisley-rd., Govan, Glasgow.

Gosforth (Northumberland).—Erection of admission hospital with 74 beds and two convalescent villas of 20 beds each at St. Nicholas Hospital, for Newcastle Hospital Brd. Architect, E. H. Allsford, 37, Westhill-rd., Wandsworth, London, SW18: *Leslie & Co., Woodlands-rd., Darlington.

Halifax.—Erection of crematorium at Park Wood, for TC: *Marshall & Rushworth, Ltd., Huddersfield-rd., Elland, £54,669. 68 two-storey flats at Mixenden and Illingworth, for TC: *Marshall & Rushworth, Ltd., Huddersfield-rd., Elland, £86,000.

Hartlepool.—Erection of 60 flats in the Coverdale-st. area, for TC. Plans by BE: *T. M. Stonehouse, Ltd., Osborne-rd., West Hartlepool.

Hebburn-on-Tyne.—Erection of cinema in Victoria-rd., Hebburn, to accommodate 800 people, for Dawe Bros., Westgate-rd., Newcastle-on-Tyne. Architects, S. J. Stephenson & Gillis, Saville-chbrs., North-st., Newcastle: *Stephen Buy, Westgate-rd., Newcastle-on-Tyne.

Lanarkshire.—Plans in hand for extensions and additions to the bakery at Newarthall-st., Newarthall: *Thomas Muir & Son, Ltd., 16, High-st., Newarthall.

Lanarkshire.—Erection of a new Protestant prim. sch. at Kirkwood. Thomas S. Cordiner (A), 268, West George-st., Glasgow, WC2. Excavation, brick, building and allied works: *William Purdie, Ltd., Lanarkshire Contracting Works, Coatbridge, £25,560. Carpentry, joinery, ironmongery and allied works: *William Bain & Co., Ltd., Lochrin Iron Works, Coatbridge, £13,289. Plumbing, sanitary engineering and allied works: *Kennedy & Bain, Ltd., 19, West Campbell-st., Glasgow, WC2, £7,961. Plaster, lathing, cement and allied works: *William Watt & Sons, Ltd., 499, Main-st., Coatbridge, £1,020. Electrical fittings installation and allied works: *Campbell & Douglas, Ltd., 295, Buchanan-st., Glasgow, £2,840.

¶London (Admiralty).—Particulars of contracts placed by Civil Engineer-in-Chief's Dept., Admiralty.

Portsmouth: Survey for railway track, Edgar Allen & Co., Ltd., Imperial Steel Works, Sheffield, 9. Reconstruction of boundary wall, Jno. Croad, Ltd., Portland-st., Portsmouth. *Wrabness:* Construction and alterations, kitchens servery and dining-rooms, Joseph Moss & Son, Ltd., St. Helena Works, St. Helena-rd., Colchester. *Brawdy:* Erection of four officers' and eight ratings' houses, Staverton Builders, Ltd., Totnes, Devon.

¶London (Air Ministry).—Contracts to value of £500 or over for week ended May 22:—

Building work: Lewis & Watters, Ltd., Sandon-rd., Hepton, Stafford; G. & J. Seddon, Ltd., Little Hulton, Walkden, Manchester; W. E. Chivers & Sons, Ltd., Devizes, Wilts; R. A. Buckle, Ltd., Gas Works-la., Prestatyn, Flintshire; Kerridge (Cambridge), Ltd., Sturton-st., Cambridge.

Heating services: Young, Austen & Young, Ltd., 8, Rockstone-pl., Southampton; Ashwell & Nesbit, Ltd., Barkby-rd., Leicester; Benham & Sons, Ltd., 66, Wigmore-st., London, W1. *Surfacing work:* The General Asphalte Co., Ltd., Grafton-rd., London, NW5; May Gurney & Co., Ltd., Trowse, Norwich. *Painting work:* C. J. Else & Co., Ltd., 467, High-st., Lincoln. *General maintenance work:* Willcocks & Stephens, Ltd., Lower Polsham-rd., Paignton, Devon; Lewis & Wafters, Ltd., Lime-ave., Lillington, Leamington Spa, Warwicks.

London (British Railways).—Contracts placed by London Midland Region. Supply and erection of steelwork for a new cradle for No. 2 slipway at Fleetwood Harbour and Docks: *Butterley Co., Ltd., Butterley, nr. Derby. Clay digging and drainage between 126 miles 260 yds. to 126 miles 750 yds. on the up and down lines at Braunston and Willoughby on the former GC main line: *Leonard Fairclough, Ltd., Terminal House, Grosvenor-gdns., London, SW1. Reconstruction of the workshop for maintenance staff at Ramsden Dock basin, Barrow-in-Furness, *John Leck & Son (Barrow), Ltd., Ironworks-rd., Barrow-in-Furness. Patent glazing for the renewal of the roofs of No. 16 wheel shop and No. 19 smithy shop at Derby locomotive works: *The British Challenge Glazing Co., 14-18, High-st., Stratford, London, E15. Supply and fixing of RPM sheeting for the renewal of the roof of No. 19 smithy shop at Derby locomotive works: *Manchester Slate Co., Ltd., Lancaster-rd., Didsbury, Manchester.

London (British Railways).—Contracts placed by the Eastern Region:—

Alteration of routes of, and provision of fire protection to cables between, Bethnal Green and Bow Junction: *Johnson & Phillips, Ltd., Charlton, London, SE7. Provision of fire protection cables at Fruiterers' Arch, Shadwell: *Johnson & Phillips, Ltd., Charlton, London, SE7. Part supply and complete erection of lineside fencing in the Sheffield district: *Supreme Fencing, Ltd., 10, St. Albans-rd., Watford, Herts. Drainage and partial reballasting of the permanent way between Elmswell and Haughley: *Eagre Construction Co., Ltd., East Common-la., Scunthorpe.

London (Metropolitan Police).—Contracts placed by Metropolitan Police:—

Erection of four flats and three maisonettes at Rhondda-gr., Stepney: *George Barker, Ltd., £16,780. External painting and repairs at Hackney Police Stn.: *Kind & Co. (Builders), Ltd., £1,290. External and internal redecorations and repairs at Bethnal Green Police Stn.: *A. E. Fields, Ltd., £1,799. Telephone boxes repairs, etc., at J Division: *E. H. Bull, £1,115. Erection of nine flats at St. Francis Lodge, Harrow: *J. Dorey & Co., £22,125.

¶London (MOW).—Contracts placed by MOW during week ended May 15:—

London: Hythe House, Brook Green-rd.; W6, external and internal decorations, Alfred Bagnall & Sons, Ltd., 141, Uxbridge-rd., London, W12; Minford House, Rockley-rd., W12, external and internal decorations, F. Troy & Co., Ltd., 131, Great Suffolk-st., London, SE1; Eastern District Office, Whitechapel-rd., E1, extension of roof of south-west wing, Flowitt & Co., Ltd., 168, Merton High-st., London, SW19; Queen Anne's Mans., SW1, erection of motor room, etc., Whyatt (Builders), Ltd., Bentley House, 225, Streatham High-rd., London, SW16. *Buckinghamshire*: RAE RFD, Westcott, nr. Aylesbury, erection of sewage disposal works, A. Roberts & Co., Ltd., 79, Eccleston-sq., London, SW1. *Essex*: Woodford, erection of a telephone repeater stn., G. H. Miller & Co., Ltd., Sheridan Works, Thorpe-rd., Forest Gate, E7.

Glamorganshire: CE Watch House, Port Talbot, Glamorgan, alterations and extensions, P. Gaylard & Son, 4, Court-rd., Bridgend; NAB, Quarella-rd., Bridgend, alterations, P. Gaylard & Son, 4, Court-rd., Bridgend. *Lancashire*: Inland Sorting Depot, Simonswood, nr. Liverpool, protective painting to structural steelwork of Shed "C," Baxter Bros. (1920), Ltd., Collingwood-bldgs., Newcastle-on-Tyne. *Somersetshire*: Admiralty, Foxhill and Ensleigh TOB, Bath, resurfacing road, footpaths and kerbing, Roads Construction (1934), Ltd., Stonleigh House, Frome, Somerset. *Yorkshire*: Late Miners' Hostel, Rotherham-rd., Maltby, membrane covering to corrugated sheet roof, Berry Wiggins & Co., Ltd., Field House, Breams-bldgs., Fetter-la., London, EC4.

¶London (War Dept.).—Contracts placed by WD during week ended May 15:—

Lanarkshire: Hutted camp, Wm. Gibson & Co. (Builders), Ltd., Paisley. *Renfrewshire:* Hutted camps, Wm. Gibson & Co. (Builders), Ltd., Paisley. *Co. Down*: Building work, Thos. Thornbury & Co., Ltd., Belfast. *Yorkshire*: Installation of water services, The Selborne Engineering Co., Ltd., Newcastle-on-Tyne. *Nottinghamshire*: Painting and decorating, T. Woodward, Worksop.

London: Painting and decorating, George Jones & Son (Contractors), Ltd., London, W8. *Worcestershire*: Repairs to floors, etc., John Bowen & Sons, Ltd., Birmingham. *Warwickshire*: Roof repairs, Allweather Mechanical Grouting Co., Ltd., London, SW1, *Staffordshire*: Resheeting and painting of sheds, Manchester Slate Co., Ltd., Manchester. *Devonshire*: Painting and decorating, T. H. Kenyon & Sons, Ltd., London, W9. *Wiltshire*: Building, Brazier & Son, Ltd., Southampton.

Manchester.—Erection of Plant Hill sec. sch., for EC: *Hy. Green & Son (Builders), Ltd., Manchester.

Newcastle-on-Tyne.—Alterations in Grainger-st., for Co-operative Permanent Building Society, Ltd.: *Gill & Nicholson, Saville Row, Newcastle-on-Tyne.

Newcastle-on-Tyne.—Work is being started on the construction of three shops and two flats in Broadwood-rd. and West-rd., for Mr. A. Eblett. Architects, J. W. Taylor & Sons, St. James-bldgs., Gallowgate, Newcastle: *Crawford & Huddart, Nixon's Yard, Wideopen.

Northampton.—Four houses at Eastfield, for BC: *R. Marriott, Ltd., 171, High-st., Rushden, £7,122.

North Riding.—Erection of prim. sch. at Northallerton, for CC. Architect, J. H. Napper, 56, Eldon-pl., Newcastle-on-Tyne. Quantity surveyors, Turner & Ing, 71, Linthorpe-rd., Middlesbrough: *Walter Thompson (Contractors), Ltd., North End, Northallerton, £43,919.

Notts.—Extensions to Mansfield Ambulance Station, for CC: *A. Mason (Contractors), Ltd., Sutton-rd., Mansfield, £10,137.

Peterlee.—310 dwellings at Acre Rigg, for Dev. Corp. W. J. Scott, FRIBA. Quantities by G. J. Antcliff, ARICS: *Geo. Wimpey & Co., Ltd., £417,310 (subject to MOH&LG approval).

Plymouth.—Building of new factory for Dent, Allcroft & Co., Ltd., Oakfield-pl., Prince Rock, Plymouth. Architects, Alec. F. French & Partners. Quantity Surveyors, Messrs. Gleeds: *A. N. Coles (Contractors), Ltd., Sutton-rd., Plymouth.

Preston.—Construction of Ashton ctv. sec. sch., for TC: *T. Croft & Sons, Ltd., Preston, £199,998.

Runcorn.—Block of four shops and six maisonettes at Russell-rd. estate, for UDC: *W. E. Jones (Contractors), Ltd., Middlewich, £21,183.

Rutherglen.—Erection of a Protestant prim. sch. at Spittal, for Lanarkshire Corp. William Watt (F), Education A, County Offices, Albert-st., Motherwell-Wishaw. Excavation brick, building, concrete and allied works: *John C. Brown & Co., Ltd., 34, Church-st., Larkhall, £56,246. Structural steel and allied works: *Donald Clark & Son, Ltd., Caledonia Iron Works, Rutherglen, £4,552. Steel windows, casements and allied works: *Frederick Braby & Co., Ltd., Peters-hill-rd., Springburn, Glasgow, N2, £5,188. Heating, engineering installations and allied works: Lanarkshire County Works Engineering Dept., Albert-st., Motherwell-Wishaw, £5,838. (Other contracts let.)

Salford.—Reconstruction of St. John's Methodist Church, Liverpool-st.: *David Walton & Co., Ltd.,

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Clarendon-rd., Salford. Reconstruction of St. Ambrose's Church, Liverpool-st.: *E. B. Jones & Rawlinson, Ltd., 6, Leaf-sq., Salford.

Stoke Newington.—Erection of 52 flats and five garages on the site of 58-78 (even), Bethune-rd.: ‡Direct Labour, £93,000.

Sunderland.—Work is proceeding on alterations and additions to St. Anthony's Convent of Mercy, Thornhill-ter. Architects, W. & T. R. Milburn, 17, Fawcett-st., Sunderland: *D. & J. Ranken, Ltd., Stockton-rd., Sunderland.

Sunderland.—Rebuilding war-damaged premises in Fawcett-st., for the Sunderland Working Men's Building Society. Architects, W. & T. R. Milburn, 17, Fawcett-st., Sunderland: *Hudson & Lucas, Fontaine-rd., Sunderland.

Tynemouth.—Work for CB:—Eight shops and maisonettes, Marden, Tynemouth: *Gilbert Park & Son, Ltd., Tynemouth-rd., North Shields. 12 terrace houses, Verne-rd., North Shields: *C. Dunleavy, 2, Grange-cl., Tynemouth. Foundations for new fire and ambulance stn., Marden, Tynemouth: *Brims & Co., Ltd., City-rd., Newcastle-upon-Tyne 1. Monkhouse cty. prim. sch., Marden, Tynemouth: *Benjamin Peel, Ltd., East Mill Works, Tynemouth.

Walsall.—Erection of a branch library at West Bromwich-rd., for BC: *Austin & Co., Daw End-la., Rushall, £8,433.

Washington (Co. Durham).—Erection of four shops, flats and garages, for UDC: *W. Wigham & Sons, Castletown, Sunderland, £11,440.

Wiltshire.—Central heating installation and fencing on the RAF stn., Boscombe Down, Wiltshire: *Beric, Ltd., 131, Bargates, Christchurch, Hants.

Worcs.—Following for CC:—Erection of Stourbridge College of Further Education: *A. H. Guest, Ltd., Coalbourne Brook, Stourbridge, £122,624. Kitchen and dining-room accommodation at Prince Henry's gram. sch., Evesham: *Espley & Co., Ltd., 77, High-st., Evesham, £13,699.

NEW COMPANIES

THE FOLLOWING NEW COMPANIES, registered in England, have been announced by Jordan and Sons, Ltd., company registration agents.

Sellers Brothers (Spenborough), Ltd. (530372.) Regd. March 15, Booth-st., Cleckheaton, Yorks, bldrs. and contractors, etc. Nom. cap.: £6,000. Dirs.: J. Sellers and Elsie Sellers, Bramhope Hse., 2, Bramhope-rd., Cleckheaton.

Purtons (Builders), Ltd. (530410.) Regd. March 16, 2, Colegate Cottages, Crofton-rd., Farnborough, Kent. Nom. cap.: £1,000. Dirs.: W. J. Purton, Haslemere, Mada Rd., Orpington, Kent; A. E. Purton, Casa-Mia, 70, Hilda Vale-rd., Farnborough, Kent; W. C. Purton and E. D. Purton.

R. G. Winder and Son, Ltd. (530413.) Regd. March 16, 17, Queens-rd., Brighton, bldrs., etc. Nom. cap.: £100. Dirs: R. G. Winder and Blanche I. Winder, 6a, Preston Park-ave., Brighton.

V. G. Horsley and Son, Ltd. (530419.) Regd. March 16, bldr. and contractor. Nom. cap. £7,000. Dirs.: V. G. Horsley and Helen F. Horsley, 20, Felix-rd., Felixstowe, Suffolk.

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